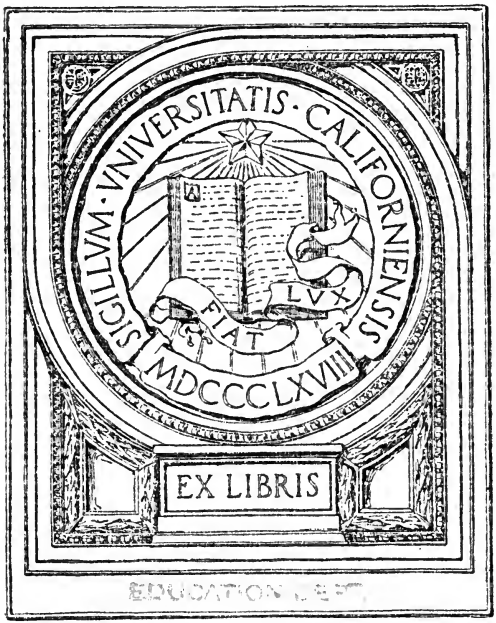

# COMMERCIAL GEOGRAPHY

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London
MACMILLAN AND CO., LIMITED
NEW YORK: THE MACMILLAN COMPANY
1897

*First Edition* 1894
*Reprinted* 1897

# PREFACE

A PREFACE which may usually be dispensed with in a work of this character is needed in this particular case for three reasons.

In the first place, I wish to acknowledge my indebtedness in compiling this little handbook to several important works, but chiefly to the invaluable *Uebersichten der Weltwirthschaft*, a record started by the late Professor F. X. Von Neumann-Spallart, but now edited by Professor Franz Von Juraschek. It should be in the hands of all teachers dealing with the statistics of Commercial Geography. After this Scherzer's *Produkt und Consum* has been of most assistance to me.

In the second place, it is desirable to define the position of such a book as the present. It does not profess any originality. It is designed as a text-book to be used in schools and classes, and to furnish an outline sketch which may be filled in and elaborated by the teacher or lecturer.

In the third place, I would say a word as to the method I have employed. It is one which I have tested by several

years' teaching, and one which seems, to me at least, to impress itself upon students—perhaps by reason of its likeness to the household life with which they come into some contact. A great many statistics have been given with the object of illustrating the comparative position which the various countries occupy, and their relation to the United Kingdom. It does not follow that they should be learnt by rote. They will serve their purpose if they are so studied as to give the student an approximate knowledge of the importance of the different commodities, and of the situation and functions of the different nations.

E. C. K. GONNER.

University College, Liverpool,
*August* 1894.

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# COMMERCIAL GEOGRAPHY AND ITS PRINCIPLES

# CHAPTER I

## INTRODUCTORY

**Geography** is the study of the environments of man. It has to observe, arrange, and describe the physical conditions under which he lives, and to indicate the part which they respectively play in determining the course of his development and the nature of his occupations. In so doing, the geographical student must take notice also of the most prominent political influences which co-operate with the foregoing in producing certain effects. A scientific pursuit of geography involves the exercise of two main faculties and entails on the student two functions. He must observe or collect facts, and he must arrange them when collected. This he must do in order that he may be able (1) to describe the facts, both political and physical, present in a particular country or part of the world, (2) to indicate the relation between the various facts. Thus the possession by South America of a great number of navigable rivers is an important fact. But such isolated facts are not sufficient. We must consider and learn the importance to a country of a large system of internal navigation.

**Commercial Geography** is not a separate branch of geography. It is merely the consideration of geographical facts, in so far as they subserve particular ends and bring about particular developments. In studying it we confine ourselves to a restricted view of general geography. We no longer ask how certain facts affect man, but we ask how

they affect him in his manufactures, commerce, and agriculture, or, to use the most general terms, as producer and consumer. Such a study is of practical importance, because it teaches—

*a.* The different industrial or commercial occupations of different countries, districts, and towns.

*b.* The localities in which different goods (food, raw material or manufactures) are produced.

*c.* The relations uniting these, *e.g.* one country buying from another, as England procures raw cotton from the United States of America.

*d.* The conditions on which national success in the various industrial or commercial occupations depends. Thus a knowledge of commercial geography teaches the directions in which future developments may take place.

In studying these various matters two subjects present themselves at once for inquiry :—

(1) The ways in which his physical and political surroundings affect man in his manufacturing, commercial, and agricultural capacities, *i.e.* industrially or commercially.

(2) The respective conditions of success in the various industrial branches.

## CHAPTER II

### LEADING PHYSICAL AND POLITICAL INFLUENCES

THOUGH it is not possible to enumerate all the varying influences which affect man in his economic character, they may be grouped under certain headings which will show the nature of the effect which they are likely to produce. And first of all, these so-called geographical influences which surround and determine the course of the development of the various nations must be broadly divided into—
A. **Physical.** B. **Political.**

### A. PHYSICAL INFLUENCES.

The physical surroundings are capable of separation into three groups, each requiring separate consideration.

(1) **Natural Formations and Position.**
(2) **Natural Forces.**
(3) **Soil and Mineral Deposits.**

(1) **Natural Formations and Geographical Position.**—Among the conditions falling under the heading which affect a country in its economic (*i.e.* industrial and commercial) developments, two require notice.

*a. Proximity to the sea* and possession of navigable water-ways.—By its proximity to the sea a country is chiefly affected in two ways.

i. In respect of its climate. In this connection other influences have to be taken into account, as, for instance, the effect of mountain ranges and the

direction of the winds. These considerations will be treated farther on (pp. 8, 9).

ii. With regard to its means of easy communication with other countries and between the different parts of its own coast. Navigable rivers and other water-ways have similar effects.

In early and mediæval times those countries developed more quickly which had good water frontage. Thus in ancient times civilisation and trade advanced most rapidly in the countries bordering on the Eastern Mediterranean. In the Middle Ages the great trading countries were the Italian cities, as Venice and Genoa, and the Hanse towns, some of the latter, as Lübeck, Stralsund, Rostock, lying on the Baltic, others on large rivers.

Of early towns those which were not built solely for purposes of defence were usually situated on rivers. The river was both the road and the railway of such towns, and to be on the river meant to be in communication with the outside world—Oxford, London, Winchester, Frankfort, Cologne.

*A good sea frontage or coast line is still of immense importance to a country.* Russia complains of being shut off from the open sea. Austria has one good outlet in Triest. Germany, despite Hamburg and Bremen, is much shut in. With regard to coast line Europe has 1 mile of coast to every 190 square miles of area, having five times as high a proportion as has Africa.

*b. Mountain Ranges.*—These are important in two ways.

i. They affect climate in conjunction with winds, etc. (pp. 8, 9).

ii. They may obstruct communication and locomotion. At one time the Alps separated and protected Italy from the other countries of Europe. The

ranges dividing Thibet from India are still a great barrier in the way of communication. In South America the East has been divided from the West by the Andes, which will soon be pierced by the railway which is to connect Buenos Ayres with Valparaiso through the Uspallata Pass.

**(2) Natural Forces, Winds and Climate.**

*a. Winds.* — The course of the winds is important because of both their more general effects and the influence they exert on the climate of particular countries.

Winds are air currents from regions of higher to regions of lower pressure. Their courses depend then on the position of these, and largely in consequence on the relations of temperature existing between (a) the regions round the Equator and the Poles; (b) the large land masses and the sea. According to these causes they may be divided into three classes, arising respectively out of (a) differences of temperature at the Poles and the Equator; (b) the relations of land to sea; (c) local and occasional causes.

(a) The main and regular course of the winds arises from the difference of temperature at the Poles and the Equator, together with the rotatory action of the globe. From the colder regions of the Poles constant currents are maintained to the hotter Equator. The wind starts from polar regions, where the earth's rotatory motion is slow, and travels towards the Equator, where the rotatory motion is swift. Hence the regular winds which would at starting be direct north and south are given an easterly action as a result of the rotation of the earth from west to east. As it whirls round it comes as it were against the wind, and thus the great air currents known as the north-east and south-east trade winds are established. They blow north and south of the Equator from about 30° to 9° N. and 30° to 3° S., between them being imposed the tropical belt of calms. North and south of the trade winds the prevailing winds are westerly. The high air currents from the Equator to

the Poles are somewhat dragged round by the rapid turn of the earth, and as the speed at the Poles is much less than at the Equator they move more rapidly than does the globe in these parts, and are felt as westerly winds.

(b) Winds of the second class have been divided into *land and sea breezes* and the *monsoons*. The former are of importance with regard to the temperature and general well-being of the coast part of the countries concerned; the latter with regard to locomotion, which at certain seasons of the year they often obstruct. They are occasioned by the circumstances consequent on the shifting of the region of greatest heat from the north to the south of the Equator. From spring to autumn the monsoon winds north of the Equator coincide in direction with the trade winds, blowing from the north-east, but south of the Equator they are north-westerly; during the winter months these conditions are reversed, north of the Equator the monsoon winds being south-west, while south of it they coincide with the trade winds and blow from the south-east. The season of change is a time during which tempests and thunderstorms threaten the districts and seas lying in the neighbourhood of the Equator.

(c) There are in addition to the above many local and less regular, and therefore less calculable winds.

The main importance of the winds displays itself—

(1) *In connection with sea moisture*, etc., as affecting the temperature and climate.

(2) *In the assistance lent to locomotion.* A knowledge of the probable direction of the winds at particular times leads navigators to shape their courses so as to avail themselves to the full of any aid they may offer, and to avoid the perils and tempests which are frequent in particular localities.

*b. Climate.*—The important characteristics of climate are *temperature* and *moisture*. Partaking as they do, in varying degrees, of these two elements, the climates of different countries exhibit the utmost variety. One country, as North Brazil, may be, in climatic conditions, very hot and very moist, another, as North Chili, and to a less

extent South Australia, hot and dry, another cold and dry, as Manitoba, and another chilly and damp, as is England. The causes determining climate are many. Those affecting it with regard to *temperature* are—

i. Distance from the Equator.

ii. Altitude. The higher a man goes the colder he becomes. It has been reckoned that an elevation of 420 feet is equivalent to going 100 miles nearer one of the Poles. Thus, according to report, Antisana in Ecuador, just beneath the Equator, has, owing to its great altitude of 13,000 feet above sea level, the same average mean temperature as St. Petersburg, which lies in 60° N. latitude, but on the sea level.

iii. Exposure to different winds and proximity to the sea. Thus the north-western shores of both great continents, the old world and the new world, are warmer than the eastern, being exposed to the south-west in place of easterly winds. Again the centre of the old world is farther from the sea and colder than the centre of the new world.

With regard to *moisture* the leading causes of difference are—

i. Exposure to winds blowing off the sea.

ii. Position with regard to mountain ranges which may drain the winds of their moisture. The trade winds passing over America are drained by the Andes, whence flow the great rivers, *e.g.* Amazon, Orinoco, Rio Negro, etc. Similarly the strip of land in India between the sea and the Western Ghats is extremely well-watered.

*The influence of climate is felt in many ways.* It is important as—

i. Allowing labour to be more or less continuous. Extremes of climate appear to have a bad effect in not permitting regular labour throughout the greater portion of the year. In this respect the climates of North England and South Scotland

are beneficial, as there are few days too cold or too hot to allow of regular and hard labour. Hot tropical climates are the most disadvantageous.

ii. Allowing or encouraging different productions. Some products are much more sensitive to climatic influences than others, as, for instance, cotton, tobacco, vines, silk, sugar, rubber, etc. Among the articles of chief importance which have a wider range of growth are the chief cereals, and the more important animals, as sheep, cattle, etc., but even these are more profitably cultivated in certain climates.

iii. Favouring certain manufactures. Thus the climate of Lancashire is well suited for the cotton manufacture, that of the southern portion of France and of Italy for that of silks and velvets, as in Lyons, Genoa, Milan.

iv. Affecting locomotion. In these countries which suffer from rigorous winters, the ordinary modes of locomotion may be temporarily suspended. Railway routes and roads are rendered impassable by snowfalls and rivers (*e.g.* the St. Lawrence) blocked with ice.

(3) **Soil and Mineral distribution.**—The character of the **soil** determines in some instances the *nature* of the products of the country, in others the degree of fertility in which certain products can be grown. A rich soil will yield a greater return in the case of wheat, *i.e.* a greater number of bushels to the acre will be produced. This is the effect of a difference of soil in the case of the more general articles of cultivation. But in the case of other and more special articles, as cotton, particular vines, etc., it may influence cultivation to such an extent as to practically determine whether they should be cultivated at all. Despite this it does not in general impose such rigid limits as does climate. Wheat grows better on light clays or heavy loams than on other soils, but it can be cultivated very generally, though not so cheaply or with such favourable results.

The rich soil of the Mississippi bottom and the black cotton soil behind the Western Ghats in India are peculiarly favourable for the production of cotton. On less suitable soils the cotton crops are not good. Certain wines are the production of certain vineyards, as for instance wine grown on the decomposed granitic soil of the Constantia vineyard at Cape Colony.

The possession of **minerals** affects the industrial power of countries in two ways.

*a.* Certain minerals may be best described as the necessary instruments of manufacture. Of these the two chief are coal and iron, without their presence either by home production or import a nation is cut off from machinery, and can make but little progress in the ways of modern industry.

*b.* Minerals provide also the raw material of certain manufactures. Metals are the material of the hardware, certain clays and sands of the pottery and glass industries, while the possession of salt enables chemical manufactures to be prosecuted with ease and profit. These in their turn furnish other manufactures, as those of soap, paper, and glass, with one of their necessary ingredients.

## B. POLITICAL INFLUENCES.

These may be described as in part the consequence of the physical conditions of the past, in part the result of the action of mankind as displayed in history and in the administrations of the present day. They may be treated under the following headings :—

(1) **Custom and Historical Usage.**—The effect of *custom* on the economic (*i.e.* commercial and industrial) development of man cannot be over-rated. Long after the motives or necessities which have given rise to particular actions have ceased, those actions will continue to be performed. They will be discontinued gradually; individuals will deal at certain shops, no better than others, because they have been accustomed to deal there.

One nation will maintain its hold on the markets of another, though it may have ceased to be the only, and perhaps the main producer of the articles required. This is particularly the case in commerce, which requires considerable organisation for its due conduct. The imperial tie connecting England with Australia and other colonies led to an early development of trade between the countries. They traded with England because they were in constant communication. And now, though the ways of communication have been greatly widened, though lines of steamers are established between continental countries and the leading British colonies, England continues to absorb an exceedingly large proportion (about 47 to 48 per cent) of their trade. In a like manner the early development of English commerce rendered it often advantageous for many new trades to be conducted through, or by means of that country. Many commodities are brought to England to be sent on to other countries. Imports into Sweden from India usually pass through England, but even when they go direct, they are not paid for directly. The Indian exporter looks for his money from England, and the English agent gets his payment from Sweden.

Again, the system of land tenure in a country largely affects the nature of its agriculture; sometimes assisting it in particular directions, sometimes hampering it altogether. The dairy farming and market gardening of Belgium are largely due to the system of peasant proprietorship in that country.

(2) **Tariffs and Customs Duties.**—These are of three kinds, *Import Duties* on the one hand, on the other *Export Duties and Bounties.*

*Import Duties* are imposed to raise the price of the articles on which they are levied, and which are being imported into the country, and thus to benefit or protect the home manufacturers who, relieved from foreign competition, can charge a higher price for their goods. Thus industries may be encouraged; but the people who consume their products must, at any rate temporarily, pay a higher

price for what they require. Import duties will then interfere with the trade carried on between nations. If levied on raw material, they will raise the price of the manufactured article. If levied on the main staples of the food supply, they will increase the cost of living to the large body of the people. A duty on American cotton or Australian wool, levied at the ports of the United Kingdom, would affect the price of the exports. In 1846 an Act was passed in abolition of the Corn duties, up to then levied on imports of corn into the United Kingdom. Since then the average price of corn has been much lower.

*Export Duties* are duties levied on goods which are sent out of the country for the supply of foreign nations. At the present time they are rarely imposed. They may be levied for the sake of revenue, when the country levying has so great a monopoly of the article thus taxed, that the countries who have hitherto taken their supplies from it must continue to do so, or go without. At one time such duties were imposed with the view of retaining in the country certain supplies, considered necessary to its well-being. Thus, in England, such a duty was imposed at one time on the export of wool, in order that the home manufacturer might find a plentiful supply, at another on the export of corn.

*Bounties* differ from the preceding two forms of tariff duties. They are premiums given, in some way or other, either for the production of, or for the export of, goods produced in a country. Several foreign nations, and more particularly Germany and France, give bounties to the sugar manufacturers on the sugar they export.

With regard to customs duties of all kinds, it may be said that, unless levied for revenue purposes only, and so offset by similar duties imposed on home production, they may lead to unforeseen and serious results. They may sadly disorganise and disarrange the industries of a country. In consequence, also, of the obstacles they imposed on the free and beneficial exchange of commodities between different countries, commercial treaties are proposed in the interests of business to obviate their effects within

certain spheres. The whole German Empire forms one commercial union (Zoll-verein), no duties being levied on goods sent from one German state to another.

(3) **Government and Political Constitution.**—The state of commerce and manufacture in a country cannot but be largely and widely affected by the nature and strength of its government. In two ways this dependence is strongly marked. On the strength of the government rests the security of the people, both as regards their own security and the safety of their property. But, on the other hand, their individual enterprise and energy, and to some extent their skill, are bound up with the independence of character, which some systems of administration do so much to develop, others to suppress. A good government is one that is both stable and free. The South American Republics offer little or no stability, and in consequence their trade is frequently convulsed by violent fluctuations. The Argentine has great sources of wealth, but political disorders, supplemented, it is true, by other causes, have led to serious economic evils. On the other hand, England and the United States may be taken as types of the countries which have stimulated the energy of their inhabitants by a system of free and liberal administration. Their workmen are energetic and their masters enterprising.

(4) **System of Locomotion, Transport, and Communication.**—As some natural formations impede, and others facilitate communication as regards persons and goods between different and distant districts, the constructions of human energy may enable people to overcome the one and supplement the other. Railways and canals are as useful as, often more useful than, rivers, but they are a great deal more expensive, for while a country is dowered with the latter, at the most having but to improve its natural wealth, the former are the result of much toil and heavy expenditure. But without means of communication and transit a country will never reach a high position in the economic scale.

(5) **Financial Banking and Monetary Systems.**—Under the foregoing heading we considered the means of

transport of persons and goods, under this we have to note those of transport, as it were, of debts and payments. When goods have been sent from one country to another, or from one person to another, they have to be paid for either in other goods or in money. As a rule they cannot be paid for *directly* in goods or articles, since it rarely happens that one party to the bargain both buys from and sells to the other. Still less seldom is it that their transactions, when thus reciprocal, are equal in value. A cotton manufacturer does not necessarily buy the things he and his family require for their use from the same large shopkeepers whom he supplies with calico. Now, one object of a banking and financial system is to bring about an *indirect* payment in goods, in other words, to economise money and its use. If A sells to B, and buys, let us say, to the same extent from C, D, E, the cheapest method of payment is by transfer of the debt due from A to B, to C, D, and E. The system of banking has been so extended as to enable debts to cancel debts, and to save people the trouble and expense of sending money about the country.

Another important achievement of the financial organisation of the country is the free circulation of capital. Some people have saved capital and cannot use it, others want it to use but have not got it. In order that the capital may be put to its due use, the one class must come into connection with the other. This they do through intermediaries, as bankers, financiers, brokers, etc. The banking system and the money market are organisations, whereby capital passes by loan into the hands of those who can use it, and who show their power by the payment of interest either to those who have saved it, or to their agents.

(6) **Systems of Weights and Measures.**—At one time each country or state had a separate system of weights and measures and money. But after the advantages which one acknowledged system conferred on the inhabitants dwelling in the same country were fully recognised, and when these began to trade and trade frequently with

foreigners, a gradual disposition towards international uniformity was manifested. In the matter of money an absolute uniformity, even had it been possible, was by no means so necessary as in the case of weights and measures. Most countries, however, have adopted or recognised some form of decimal currency. This is the case with all the chief trading nations, with the exception of the United Kingdom and her colonies.

In the case of weights and measures it has been possible to adopt not only a system of decimal calculation, but the same system. The *Metric System* of weights and measures, as this is called, has now passed into most extensive use. It has been computed that it is in compulsory use in countries with a total population of 302 millions, that it is recognised and used in part in other countries with a total population of 395 millions, while in countries with a population of 97 millions it is optional. Many of the last two classes, however, make little or no use of the *Metric System.* Among these is the United Kingdom. Her great trading rivals use the *Metric System*, and thus gain, as recent accounts have shown, considerable advantage over her. They compute their distances, their quantities, and their measures in the same way, and consequently there is no need of intricate calculation before the inhabitants of one country understand the real meaning of the terms used by those of another.

The *Metric System* may be described as follows :— Its fundamental basis is the metre, the measure of length which is a ten-millionth part of the distance from Pole to the Equator. It is the unit of length, and, by computation, of all weights and measures. A square of ten metres is termed an are, and is the unit of surface measures. The cube of the tenth part of a metre (*i.e.* a decimetre) is the litre, the unit of capacity. The gramme, which is the unit of weight, is the weight of such quantity of distilled water at a temperature of 39·2° Fahr., as would fill the cube of a hundredth part of a metre. Few terms besides those of the chief units denoted above are in common or frequent use. All such terms, moreover, are derived

from the unit by prefixes denoting multiplication and division. Prefixes denoting multiples are derived from Greek, and those denoting divisions from Latin.

| | | | |
|---|---|---|---|
| Deca, | 10 times | Deci, | $\frac{1}{10}$th part |
| Hecto, | 100 ,, | Centi, | $\frac{1}{100}$th ,, |
| Kilo, | 1000 ,, | Milli, | $\frac{1}{1000}$th ,, |
| Myrio, | 10,000 ,, | | |

The chief measures, with their English equivalents, are given below.

Chief measures of length :—

Metre = 39·371 inches.
Kilometre = 1093·633 yards.

Chief measures of surface :—

Are or Square Decametre } 119·6 sq. yards.
Hectare or Sq. Hectometre } 2·471143 acres.

Chief measure of capacity :—

Litre = 1·761 pints.

Chief measures of weight :—

Gramme = 15·433 troy grains.
Kilogramme = 2·205 lbs.

## CHAPTER III

### THE NECESSARY CONDITIONS OF VARIOUS INDUSTRIAL AND COMMERCIAL DEVELOPMENTS

NATIONS may be classified according to the great branch of industry which occupies the energy and time of the bulk of the people, and on which they depend for their livelihood. Broadly speaking, there are but three such branches—**manufacture, commerce,** and **agriculture.** No nation, it is true, is wholly manufacturing, or wholly commercial, and few can be described even as wholly agricultural, but any one of these three methods of employment may be pre-eminently important in the case of a particular country. Still more true is this if we turn from countries to districts of countries. England is a manufacturing and commercial country; Liverpool is a commercial city; Yorkshire a manufacturing district. Agriculture is the chief occupation of Hungary, of India, etc.; Belgium is at once, but in different districts, manufacturing, commercial, and agricultural.

Success in each of these departments, though affected by a complexity of causes of very varying importance, depends in the main on the extent to which the country in question possesses certain great sources of advantage. These may be termed the conditions of its specific success. They are, as a rule, few and simple, but vary, of course, with the branch of occupation dominant in the country. They must be treated separately.

## A. AGRICULTURE.

The chief conditions of successful agriculture are as follows :—

(1) **Suitable Climate.**—The climate required depends on the nature of the particular product which it is desired to cultivate. As a rule, extremes of hot and cold, especially if accompanied by much moisture, are unsuitable for the main agricultural productions.

(2) **Nature and Fertility of the Soil.**—In respect of its productive capacity the soil differs in two ways :—

i. It may be fine or not. In countries where there is much rain, a fine porous soil is suitable for products which do not require much water at the roots, and which need warmth, *e.g.* the Delta soils of Egypt and India.

ii. The constituents of the soil required for different products are extremely various, in some instances an abundance of special elements being required, *e.g.* black cotton soil. This and other constituent properties of the soil tend to become exhausted, and then require replacement by manures. These are of three kinds, possessing respectively nitrates, phosphate, and potash.

In certain climates the land requires artificial watering by irrigation, which, though costly, has certain advantages over the supplies provided in other places by nature. Such are, i. regularity and certainty ; ii. possession of fertilising ingredients.

(3) **Favourable Conditions of Land Tenure** and customs of land owning.—The true and potent effect of land tenure on the agriculture of a country may be judged from the beneficial results of such statutes as the Agricultural Holdings Acts, which encouraged settlement on the land, and invited its improvement by assuring the farmer compensation for his unexhausted improvements. In Belgium the system of small holdings and ownerships has led to minute and careful cultivation on the part of the peasant farmers.

## B. MANUFACTURES.

The chief headings under which we may describe the necessary conditions of a high degree of development in manufacture are four :—

(1) **Climate** allowing of continuous and regular labour.—Despite the earlier growth in civilisation of the countries bordering on the Mediterranean, it is not in these but in the lands of northern Europe that manufactures have found their home. Such manufactures as have become of importance in Italy are to be found not in the south but in the north, *e.g.* Milan.

(2) **National Dexterity** or fitness for particular labours.—In those manufactures which require artistic taste in their processes, this appears undeniable. Mosaic work, for instance, is frequently, if not usually, done by Italian workmen. But even in work where the labour required is less dependent on the individual, or rather national, taste, the skill which is requisite would seem to be more easily obtained among the members of a country where those or similar occupations have been followed for several generations. Intelligence and aptitude are largely the result of inheritance.

(3) **Possession of Coal.**—As motive power other than that offered by human or animal strength is required in countries where manufacturing industries have passed out of the early stages of growth, their future is closely bound up with their possession of these in abundant and accessible supplies. The force of the wind has been utilised in some places to turn the corn-mills ; but the wind is uncertain and irregular. Water power is of greater and more frequent use. It was one of the advantages which gradually attracted the woollen manufactures from their earlier homes in the eastern and western counties to Yorkshire. But since the discovery of steam power and the invention of the steam engine, these forms of energy have been largely superseded. The great requisite of manufacture is coal.

In the first place, we must range the countries in the order of their coal production :—

| 1890 | Tons. (000,000 omitted.) |
|---|---|
| United Kingdom | 182 |
| United States of America | 141 |
| Germany | 88 |
| Austria-Hungary | 27 |
| France | 26 |
| Belgium | 20 |
| Russia | 6 |
| New South Wales | 3¼ |
| Canada | 2¼ |
| Japan | 2 |
| India | 2 |
| Spain | 1 |

Many countries, however, import coal, and one in particular does a large export trade. The United Kingdom sends 27 million tons of coal away, which is chiefly taken by the following countries :—France (nearly 5 millions), Germany and Holland (nearly 4 millions), Italy (3½), Spain (1½), Russia (1½), Egypt (1½), Denmark (1¼), India (½).

(4) **Proximity of Coal and Iron.**—The industrial importance of coal is greatly increased by the presence of iron in the same district or in pretty close proximity. Owing to the great weight of the two commodities, transport is a difficulty and an expense out of proportion to the main cost. But without iron, and abundance of iron, the manufactures of a country will remain backward. Coal is fuel, but iron is machinery. In the process of manufacturing production, coal and iron work in close and frequent harmony. Coal is used in smelting the rough ore, and in producing out of it machinery, which afterwards, in conjunction with coal, will be employed in developing the main manufactures of the countries. In addition, iron is the raw material in the case of iron and steel products other than machinery.

A reference to the table of the main coal localities in the chief manufacturing countries shows us that in the neighbourhood of many of them iron is found, sometimes in small, sometimes in considerable quantities.

*a.* The following are the *chief iron-producing countries*:—

| Average[1] for years 1886-90. | Tons. (00,000 omitted.) |
|---|---|
| United Kingdom . . . . . | 7,7 |
| United States of America . . . . | 7,0 |
| Germany . . . . . | 4,1 |
| France . . . . . | 1,7 |
| Belgium . . . . . | 7,7 |

*b.* The actual importance to manufactures of the possession of both coal and iron is seen in Germany, where the three great manufacturing districts correspond closely to the localities where such exist, *viz.* round Elberfeld and Essen, Mühlhausen to Saarbrück, Chemnitz. In Austria there are both coal and iron, but they are not in the same neighbourhood.

The growth of any particular branch of manufacture will depend, in addition to the foregoing general considerations, on the advantages possessed by the country or district in question, with regard to the particular raw materials or other requisites needed in its operations. Thus salt is required in, and forms, as it were, the base of a certain group of products. Alkali and chemical works have grown up near the sources of salt supply, as, for instance, those of St. Helen's and Widnes near the salt of Cheshire; and in turn other industries requiring chemical constituents, as glass and soap, have been founded near them. At St. Helen's there are glass works, and in the districts of Liverpool large soap works.

## C. COMMERCE.

The commercial activity of a country, taken as a whole, is usually consequent upon its high degree of development in some other department. In the United States of America the agricultural products grown so largely in the Central and Western States are sent for exchange, sale,

[1] Adapted from *Uebersichten der Weltwirthschaft* by Dr. Von Juraschek.

and export to large towns, *e.g.* Chicago. In the United Kingdom the large midland industrial district has a commercial centre in Birmingham. But though some such connection as this usually exists, giving rise often to commerce in its earlier stages, some countries, and especially some cities, assume a particular importance in the exchange transactions of the world. Thus England is an important commercial country in very many ways. Marseilles is an important commercial city.

Yet while commercial activity or activity in exchanging is necessarily consequent on having something to exchange, the possession of commercial opportunities (*i.e.* outlets and markets) will lead to a great development in the other departments of occupation. *No country will attain a high position in manufacture unless it has good opportunities of exchanging its goods* for those produced by other nations. On what these opportunities depend a short account will show.

(1) **Central Geographical Position.**—Commerce means exchange, and a country, or rather locality, to become a place of exchange should be in a position where goods will tend to come for such a purpose. No better illustration of this is offered than by Singapore, which serves as an emporium and a market between the Malay and China seas on the one side, and British India with the more western world on the other. Liverpool, again, is on the high road of commerce, as it were, between England and the United States. In many cases custom, habit, and other causes, some of which are referred to below, modify the advantages accruing from, or the disadvantages apparently consequent on, the lack of a directly central position.

(2) **Means of Locomotion**—*a. External.*—In connection with the actual geographical position of a place or country, the advantages of proximity to the sea require notice afresh. Water carriage is so much the cheapest, and foreign commerce has become so important, that good seaports are of the very highest economic value to a modern nation. To be of service, these should not be too far distant from those districts to which the goods imported or from which the goods exported go. Much of the early commercial

importance of Italy rested on its excellent maritime position, and there has been some increase in the business since the opening of the Suez Canal threw it once more across the great marine highway from the East to Europe. The possession of an effective mercantile marine is needed to enable a country to avail itself of the full advantages offered by a long stretch of seashore, and by frequent and convenient ports and harbours.

The importance attaching to immediate communication with the sea, and with as much of the sea as possible, is shown by the attempts to construct ship canals in different portions of the world. The Suez Canal (officially opened to traffic, 1869) connects the Mediterranean and the Red Sea, and thus enables vessels trading between the East and Europe to escape the long journey round the Cape of Good Hope, a saving of about one-third in distance from London to the ports in British India. The proportion of total Canal as against total Cape voyages is about ten to six. It has stimulated the trade between the leading European nations and India, China, and Australia, the greater portion of which now passes through it. But nowhere have its results been more than in the great seaports of Italy and Southern France, as Marseilles, Genoa, Venice, Naples, and Brindisi. Other important sea canals projected or commenced are from Bordeaux to Narbonne, Liverpool to Manchester, from Kiel to below Hamburg. Though the recent failure of M. de Lesseps' attempt to cut a canal across the Isthmus of Panama has thrown a shadow upon the different projects for connecting the Atlantic and Pacific Oceans by means of a waterway through Central America, it is highly probable that new efforts will be made to achieve an end which involves so enormous an economy of distance and so of time.

*b. Internal.* — The locomotion within a country may be separately treated, according as it takes place by means of roads, rivers, canals, and railways. Of these it may be said that the first named, though in historical order only rivalled by the river or natural waterway, are, so far as long distances are concerned, of but

little importance. Roads are the means of local traffic, but not of long journeys. Rivers are still of immense importance. As has already been said, water carriage is superior in cheapness to land carriage, and where natural waterways exist, as in the case of rivers, there is, in addition, no cost incurred in construction. The river system of South America is remarkable for its completeness. Canals, which are a means either of supplying the place of rivers or of supplementing them, have been largely constructed during the last century. In England they serve both purposes, in some cases connecting important places, *e.g.* Liverpool and Leeds Canal, in others running from one river to another, *e.g.* the Oxford Canal, running from the Thames to the Trent. A good instance of the latter kind is the Canal du Midi in France, which connects the waters of the Garonne with the Mediterranean. In Brazil the navigation of the river Madeira, where the course of the river is interrupted by rapids, is carried on by means of a canal running from above to below the obstruction. But still more important to locomotion and communication has been the growth of railways in countries such as England, Germany, and the eastern part of the United States. Any of these may be treated as a type of a country resting its industrial development on a railway system, even as Holland may be said to depend on a canal system, and Brazil on a river system.

Locomotion may also be treated of with regard to the force of propulsion employed. There are human and animal powers, the force of the wind and waters (*i.e.* currents of rivers, steam, and electricity).

(3) **Habit and Custom.**—A trade once established will not only endure after the immediate need at the time of its initiation has vanished, but even attract more commerce into the channel thus made.

(4) **Banks and Markets.**—As a rule the commercial development of a country entails a corresponding growth in banking and financial institutions. These, necessitated at first by the ordinary transactions of business, become a powerful aid to further development by reason of the

opportunities they provide for the advantageous distribution of capital among the various enterprises. These institutions group themselves in or round some city, either the metropolis, as London, Paris, Berlin, or some other place which has grown into a financial centre, where the banks as it were may bank, and where the lenders and borrowers of capital come into contact in the Stock Exchange or Bourse. Most large towns, as for instance Manchester and Liverpool, Glasgow and Belfast, become little financial centres in themselves, but even in cases such as these there is a good residue of business to be transacted in London, where what may be described as the final settlement takes place.

In considering the foregoing, which have been termed the chief departments of human activity, it may be asked if there are any main differences evident answering to the difference of occupation. In the first place, *each main division of employment tends to bring about a particular distribution of the population.* Agriculture is usually carried on in districts which are not thickly peopled, though of course the degree of density largely depends on the nature of the chief commodity. A district growing and subsisting on rice, as, for instance, the Ganges valley in India, is capable of a much greater population per acre than are the wheat counties of England. On the other hand, commerce requires for its purposes large and populous cities. Manufactures are often plied in towns, or in the neighbourhood of towns, but often too they spread themselves out through a wide district which is densely populated, but of course by no means so densely as are the streets of large cities. They are covered by numbers of small towns or industrial villages. Such are, for instance, the districts called the Potteries extended around Stoke and Newcastle in Staffordshire, the Plauensche Grund in Saxony, the Black Country around Wolverhampton.

In the second place, the density of population, *granted a knowledge of the main food-stuff produced and required,* affords some rough indication of the class to which a particular country belongs Agricultural countries and

districts are, as a rule, less densely peopled, though a rice-eating country will always bear a heavier population than one which is wheat-eating. The following table affords some idea of the guidance thus furnished, as well as of the caution required in drawing an inference in any particular case. In the first column is given the number of tons of coal consumed per head of the population (1890), in the second the population per square mile :—

| | Tons of coal consumed per head of the population approximately. | Density per square mile. |
|---|---|---|
| Belgium | 2.6 | 510 |
| United Kingdom | 4.0 | 308 |
| Germany | 1.8 | 227 |
| France | .9 | 187 |
| Austria | .6 | 161 |

A country like the United States of America, which is as yet but partly taken up, and the different districts of which differ so much, cannot be taken into account. In it the consumption of coal per head was 2.2 tons.

# PART II

# THE GEOGRAPHY OF THE CHIEF PRODUCTS AND OTHERS

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## THE GEOGRAPHY OF THE CHIEF PRODUCTS AND OTHERS

ACCORDING to their conditions and needs the various nations and peoples are occupied in the production of the commodities required to satisfy their wants and those of others. These may be treated of under separate headings :—

(1) **Food Stuffs.**
(2) **Textile Raw Materials** and their manufacture.
(3) **Manufacture.**

This division does not pretend to any close scientific precision, but it may be said to embody the popular sense of the distinctions which may be drawn between the different articles. As an individual can look through his yearly bills and make up his accounts, so we can look through the yearly bills of the various countries.

*Firstly*, we must consider their *food supply*, we must see what it amounts to, and endeavour to discover the sources from which it is derived, for *each country, like an individual, must either grow its own food supply, or buy it from some—not shop, but—country.* Sometimes a country, besides growing enough for itself, has a surplus to send away to other countries, which may be described as its customs.

*Secondly*, let us turn from food and drink to the question of *clothing and household articles.* Even in the case of

food, a nation is in one way unlike an individual in its purchases, for, while the latter usually buys articles in an advanced state of preparation, it buys them in very large quantities and in a raw condition. But when we come to clothing the distinction is much more marked. Some buy raw material to manufacture for their own use and that of others, while others buy manufactured articles. In the same way some countries occupy themselves with the production of raw materials, others with perfecting these into their manufactured form. The manufactures must be treated of separately. The most important articles of clothing are those which are woven and spun; outside these there are many others. But these are so many and so various that it will be most convenient to class them together with the many other products required to supply the multifarious needs of mankind.

# CHAPTER I

## THE PRODUCTION OF FOOD AND DRINK

In treating of these we shall find it necessary to devote nearly all our attention to those which are the more important. They may be classified as follows :—

i. **Grains and Pulses.**—*Breadstuffs*—Wheat—Rye—Barley—Oats—Maize—*Substitutes for Breadstuffs.*

ii. **Meats.**—Meat (sheep and oxen)—Bacon, ham, and pork—Dairy produce—Fish.

iii. **Groceries.** — Tea — Coffee — Sugar — Cocoa — Southern fruits—Spices.

iv. **Wine, etc.**—Wine—Beer—Spirits.

v. **Tobacco.**

### i. Grains and Pulses.

#### 1. Breadstuffs.

To get some idea of the grain production of the world, or rather of that part of the world about which we can form any idea, we may start with an estimate of its total value. Taking the years 1884 and 1887, a good average grain harvest has been calculated as worth about £1,100,000,000.

This total represents the year's harvest of all the cereals. It may be divided between the chief and other grains much as follows :—

| | |
|---|---|
| Wheat . . . . . | £435,000,000. |
| Maize . . . . . | £187,000,000. |

| | |
|---|---|
| Oats . . . . . | £167,000,000. |
| Rye . . . . . | £149,000,000. |
| Barley . . . . . | £98,000,000. |
| Miscellaneous . . . . | £30,000,000. |

These figures are certainly very large. They show the great value of this portion of the food supply—the immense importance of one cereal, wheat, and the great prominence of three others, maize, oats, and rye.

Now we must turn to the local distribution of these totals, and glance at the different countries according to their grain production. The important countries may be ranged in their order of production[1] with regard to the chief cereals :—

*Wheat.*—(European countries) France, Russia, Austria-Hungary, Italy, Germany, Spain, United Kingdom, Turkey. (Other countries) United States, British India, Canada, Australia.

*Rye.*—Russia, Germany, Austria-Hungary, France.

*Barley.*—Russia, Austria-Hungary, Germany, United Kingdom, France, United States, Algiers.

*Oats.*—Russia, United States, Germany, France, United Kingdom, Austria-Hungary, Canada, Sweden, Denmark.

*Maize.*—United States, Austria-Hungary, Italy, Roumania.

When it is remembered that modern improvements in locomotion and transport have brought these countries into close communication, the importance to the world and to each country of so widespread production of these articles is apparent. When one country has too much, it can dispose of its surplus to another. Thus the price is kept fairly even, and, in the second place, the full pressure of a famine in one locality is moderated by the supplies which can be obtained from elsewhere. It rarely happens that bad or good harvests are universal. On the contrary, a bad harvest in one place is often contemporary with bountiful

[1] Roughly adapted from *Uebersichten der Weltwirthschaft*, edited by Dr. F. Von Juraschek, from which many of the following calculations, etc., have been taken.

production elsewhere. Thus there were bad harvests in Europe in 1885, 1886, 1889, while in India there was an excellent harvest in 1885, an average one in 1886, and a bad wheat harvest in 1889. In the United States in 1885 the wheat harvest was bad but the maize good, in 1886 a fair harvest, and in 1889 a very good one. In Europe there were excellent harvests in 1887, 1888; in India that of 1887 was bad, and, so far as wheat was concerned, moderate in 1888; in the United States there was a bad maize harvest in 1887, and a bad wheat harvest in 1888. The possibility of such compensation is greatly facilitated by the differences of time at which the harvest takes place in the various countries, owing to the great differences in their climates.

The trade in grain between the various countries is indeed very large, for the value of the amount thus transferred may be reckoned at about £140,000,000, thus excelling any other branch of trade. Estimated in quantities it amounts to some 750 or 800 million bushels. This is composed much as follows :—

| | |
|---|---|
| Wheat | 40 per cent. |
| Rye | 10 ,, |
| Barley | 12 ,, |
| Oats | 9 ,, |
| Maize | 14 ,, |
| Meal | 10 ,, |

And other grains.

The export trade is important as affording an occupation for those countries where the large stretches of unoccupied lands and a favourable climate offer an opportunity for growing more than is wanted at home, while the possibility of large imports allows industrial and more densely peopled nations to devote their energies to manufacture and commerce, in place of having first of all to produce their own breadstuffs. The more important countries may be classified respectively as grain-importing and grain-exporting countries.

MORE IMPORTANT COUNTRIES IMPORTING GRAIN.

| | Excess of Imports over Exports in 1888, in value of millions of pounds sterling. |
|---|---|
| United Kingdom | about 51 |
| France | ,, 14 |
| Germany | ,, 9 |
| Belgium | ,, 8 |
| Holland | ,, 7 |
| Italy | ,, 6 |

CHIEF EXPORTING COUNTRIES.

| | Excess of Exports over Imports in 1888, in value of millions of pounds sterling. |
|---|---|
| United States of America | about 24 |
| Russia | ,, 39 |
| British India | ,, 15 |
| Austria-Hungary | ,, 13 |
| Roumania | ,, 8 |

All the cereals referred to in the above tables are by no means of the same importance; and as the conditions of their production differ very considerably, a short account must be given of each.

**Wheat.**—This, the most important cereal so far as countries in a high state of development and as the grain trade are concerned, is grown throughout a wide climatic range. It requires a warm summer, moisture in the spring, but is not averse to fairly cold winters, especially if protected by snow.

*The time of its harvest depends*, of course, upon the particular climate of the country, thus occurring in some country at every season of the year, a fact of importance inasmuch as it provides a continuous supply of wheat in the markets of the importing countries. The dates of the chief harvests are as follows :—

January . . Australia, New Zealand, Chili, Argentine.
February . East Indies.
March . . East Indies.
April . . . Mexico, Egypt, Persia, Syria.
May . . . China, Japan, North Asia Minor, Algiers.
June . . . California, Spain, Portugal, Italy, Greece, S. France.
July . . . France, S. Germany, Austria, S. Russia, United States.
August . . Germany, Belgium, Holland, Denmark, England, part of Canada.
September . Norway, Sweden, Scotland, Russia, Canada.
October . . N. Russia.
November . S. Africa.
December . S. Australia.

The proportionate yield of wheat is by no means the same in the different countries. In the great grain countries it is lower than in those countries which are more thickly populated, and which, so far as they produce grain at all, produce it by a more intense cultivation and by more careful tillage of the soil. This is shown by the following table, where we see Great Britain and Denmark ranking very high, far above the United States and South Australia. The number of bushels yielded per acre is given.

| Countries. | Bushels per Acre. | Countries. | Bushels per Acre. |
|---|---|---|---|
| Great Britain . . | 28 | Italy . . . . . | 9 |
| Germany . . . | 21 | India . . . . . | 9 |
| France . . . . | 17 | United States . . | 12 |
| Russia . . . . | 9 | New South Wales. | 14½ |
| Belgium . . . . | 20 | New Zealand . . | 26 |
| Holland . . . . | 29 | South Australia . | 7¾ |
| Denmark . . . | 42 | Victoria . . . . | 12 |
| Austria . . . . | 15 | Manitoba . . . | 18 |
| Hungary . . . | 20½ | Ontario . . . . | 17 |

The chief wheat-consuming countries are the prominent industrial nations, the countries of Southern Europe and the North American and Australian countries. Thus the yearly consumption of bushels of wheat per head has been put at

| | |
|---|---|
| *United Kingdom* . . | 6 |
| France . . . | 8 |
| Belgium and Holland . | 5 |
| Italy . . . . | 5½ |
| Canada . . . | 6 |
| Victoria . . . | 6 |
| United States . . | 4¾ (A great deal of maize is eaten.) |

In Russia rye is the chief food of the people, a fact which also accounts for the comparatively small consumption of wheat in Germany (only 3 bushels per head), since the north of Germany is not a wheat-eating district.

The total wheat harvest of the world in 1889 was reckoned at 2040 million bushels, and in 1890 at about the same. Putting aside France, which produces a very large crop, but so far from exporting imports still more wheat, the leading countries were the United States, Russia, and British India. These three are by far the largest sellers or exporters of wheat. They send the produce of their harvest to the thickly-populated industrial countries of Europe, and especially to the United Kingdom, which has long ceased to grow enough for its own consumption. The extent of the export trade of the three leading countries is shown in the following table.

COMPARATIVE STATEMENT of the EXPORTS of WHEAT from the United States, Russia, and British India during the Years 1882 to 1890 in round numbers (approximate).

| Year. | United States. | Russia. | India. |
|---|---|---|---|
| 1881 | 186,300,000 | 36,500,000 | 13,800,000 |
| 1882 | 121,800,000 | 48,900,000 | 37,100,000 |
| 1883 | 147,800,000 | 76,300,000 | 26,400,000 |
| 1884 | 111,500,000 | 83,700,000 | 39,200,000 |
| 1885 | 132,500,000 | 67,700,000 | 29,500,000 |
| 1886 | 94,500,000 | 91,700,000 | 39,300,000 |
| 1887 | 153,800,000 | 51,600,000 | 41,500,000 |
| 1888 | 119,600,000 | 77,900,000 | 25,200,000 |
| 1889 | 88,600,000 | 125,100,000 | 32,800,000 |
| 1890 | 109,400,000 | 102,400,000 | 26,700,000 |

Since the last of these years there has been, in one year at least, a very considerable increase in the Indian exports, which would seem to show that India sends more wheat to Europe when the exports of the two other countries diminish owing to bad harvests or other causes. The United States, according to the table above, has been gradually diminishing its exports, and some think that the time is rapidly approaching when that country will cease to send much wheat abroad owing to the rapid increase of its own population and the lessening amount of new land available for cultivation except under a much higher, and so less remunerative, system of farming. On the other hand, exports from Russia have been increasing. So far as the United Kingdom is concerned these three countries are of very great importance, since, taken together, they usually furnish it with about three-quarters of the total quantity of wheat that she imports.

**United States of America.**—The United States produce very large crops of wheat and maize. Their production of wheat has to be great, since it must meet the needs of both an increasing home demand and a large export trade. Wheat growing and wheat export is a leading business. It is a business for which they possess exceptional advantages, of which the chief are—(1) large and thinly-populated plains extending through the central and western districts; (2) a virgin and fertile soil; (3) intelligent use of implements and machinery. The American farmer, untied by old custom and farming large stretches of land, will procure and use the best mechanical means for increasing his crops; (4) vast organisation for transport of the grain from the places of its growth to the great collecting centres or markets, and again thence to the ports from which it is sent to the countries acting as customers.

Of recent years a great change has taken place with regard to the districts where wheat is chiefly grown. In the decade 1850-60, the states of Pennsylvania, Ohio, New York, and Virginia were at the top of such, but now the leading states are Minnesota, California, Dakota,

Indiana, Illinois, Ohio, Kansas, Michigan, Iowa, and Missouri. This marks the tendency of cultivation in America to go westward, a tendency which affects maize as well as wheat, the leading wheat states at different dates being—

| 1880. | 1886. | 1889. | 1892. |
|---|---|---|---|
| Illinois | Minnesota | Minnesota | Dakota |
| Indiana | Ohio | California | Ohio |
| Ohio | Indiana | Dakota | Indiana |
| Michigan | California | Indiana | California |
| Minnesota | Iowa | Illinois | Minnesota |

The place of the United States in the table given above with reference to the production per acre (p. 37) shows that the soil is cultivated lightly. The average for the more western states is somewhat higher than that for the whole country, for while this is about 12 bushels, these produce an amount per acre ranging from $16\frac{1}{2}$ to $19\frac{1}{2}$ bushels.

The organisation for the transport of the wheat from these inland districts to the ports has been greatly developed of recent years. The Great Trunk Railway lines have been extended and branch lines constructed to bring the grain on to their course. In Kansas, between 1885 and 1888, no less than 4525 miles of railroad were built, and great progress has been made in Nebraska, Colorado, Montana, and Dakota. Canals have been cut and waterways by river deepened and extended so as to afford access to the line of the great lakes. The wheat goes first to the great collecting places, of which the principal are Chicago, St. Louis, Toledo, Milwaukee, Peoria, Detroit, Duluth, the great growth of these testifying to the importance of the trade. Thence it is despatched according to the port from which it may be shipped to Europe—

*a.* By the route of the great lakes and by the Erie Canal and the Hudson River to New York, or sometimes it may be shipped direct from Duluth and Chicago.

*b.* By rail to New York. This is the course taken by

a great proportion of the grain from Illinois, Wisconsin, Minnesota, Dakota, Nebraska.

*c.* By the Mississippi, which, with its tributaries, has been greatly improved, to New Orleans.

The wheat from the states on the west coast—California, Oregon, Washington—while connected with the east by five great lines, can send their produce most cheaply to the ports on the west by the waterways of the Joaquim, Sacramento, and Columbia. The exports of wheat and flour from the Western or Pacific ports has increased rapidly of recent years. They contribute some 18 per cent of the total wheat imports into the United Kingdom.

The chief ports whence wheat is despatched are New York, Baltimore, New Orleans, Philadelphia, Boston, and ports on the Pacific Coast. By far the most important is New York. From these ports the wheat and flour are despatched to the countries buying from America, and chiefly to Europe, the United Kingdom and France being much the largest consumers of American wheat. The United Kingdom, indeed, takes nearly 60 per cent of all the breadstuffs sent out of America. She buys half of the wheat and flour exported.

**Russia.**—The wheat supply of Russia is produced very largely for export, for the average consumption is only 2 bushels per head. It was only when the rye harvest failed to meet the needs of the home population that wheat prohibited from export became an important element in the fare of the people. The conditions of its production differ very much from those which exist in the United States. On the one hand labour is much cheaper; on the other hand the cultivation of wheat is not undertaken with such intelligence and with such determination to employ the best machinery for the purpose. Farming in Russia is largely controlled by the old customs of the land, and many authorities do not hesitate to say that until there is a radical change in the method under which land is held and cultivated things will not improve, and Russian produce will become more scarce in the markets of Europe. The

yield per acre is very low, amounting only to some 9 bushels, so that the large production depends solely upon the great acreage of land in cultivation. The best wheat districts are in the neighbourhood of the Don, and in the governments of Kief, Bessarabia, and Cherson and Taurus.

Out of a total production of wheat reckoned (average 1883-87) at 230 million bushels, some 70 millions are exported. Of this nearly all is exported from the ports on the Black Sea and the Sea of Azov, and, indeed, most from Odessa. Odessa lies in the neighbourhood of the best wheat provinces, freights from it are low, and it possesses the organisation needed for the conduct of the trade. The most important customer for Russian wheat is Germany, after which come France, the United Kingdom, and the Netherlands.

**British India.**—It is only during the last twenty-five years, noticeably since 1873, when the India export duty on wheat was taken off, that Indian wheat has been of any importance in European markets. Until then nearly all the wheat grown had been kept for home consumption. With regard to the production of wheat for export to Europe and for sale in competition with the United States and Russia, India possesses certain very distinct advantages and disadvantages. Among the latter must be placed its greater distance from Europe, the high rent which is paid for the land, and the want of rain from which certain districts suffer. On the other hand, labour is exceedingly abundant and, owing to a low standard of living, very cheap. The Government has done a great deal to stimulate export by the extension of the railway system and by making canals, some for irrigation and some for carriage. Though Indian wheat has made good its position, it has not been sent in such great quantities as was at one time anticipated. Before this takes place the means and organisation of transport must be improved and the freights cheapened.

The total production is on the average (1883-87) 260 million bushels, though of more recent years this amount has not often been reached. The average yield per acre is about 9½ bushels, the greatest production taking

place in the North-West Provinces. After these come the Central Provinces and Bombay. One great point of contrast between the United States and India lies in the very much greater population of the latter. While the United States has only 63 millions to support, the soil of India must find the means of sustenance for 290 millions. Though rice and millets are important food for many, a considerable quantity of wheat is consumed in certain parts of the country. Of the three wheat ports Bombay does considerably the greatest trade, exporting in the year 1891-92 more than 26 millions of bushels, while Kurachi, once less important, is now more important than Calcutta, despatching in the same year 19 to the 9 millions of the latter. The total average quantity sent from the ports of India has been reckoned at some 60 millions of bushels, of which more than 50 per cent comes to the United Kingdom. The two next largest customers are France and Belgium.

**Rye.**—This is an important crop in the north of Europe and Russia. It can be cultivated in a cooler climate than that suited for wheat, unlike which it flourishes on very poor soils. In Europe it grows as far north of the Equator as 70°. The chief countries producing it are Russia, where the peasantry depend upon the rye harvest for their sustenance; the north of Germany, where much the same conditions prevail; Sweden, Denmark, Holland, and Finland, in all of which countries it far exceeds the wheat crop. It is also grown to a considerable extent in France, where it is about one-fifth of the wheat crop. In the United Kingdom it is hardly grown at all.

With one exception it does not enter largely into the export trade of any country. Russia, however, despatches some 50 million bushels yearly (average 1886-89), most of which goes to Germany and Holland.

It is imported to a very small extent into the United Kingdom.

**Barley.**—Like rye, this cereal has a very wide range of cultivation. It can be grown farther north than wheat, though it flourishes best in the soils well adapted for the latter. It is chiefly used for malting and distilling purposes.

The United Kingdom and Germany both produce barley in much the same quantities as wheat; while in Austria, Hungary, and Russia its crop is about two-thirds, in Spain about one-half of that of the latter.

The United Kingdom, in addition to growing a large quantity of barley, imports a good amount chiefly from Russia, Turkey, Roumania, France, and Germany.

**Oats.**—Owing to its hardier nature, this crop can be cultivated in countries and districts too cold for either wheat or barley. Oats, however, refuse to yield profitable harvests as the hotter regions are approached. So far as Europe is concerned, oats are grown in the more northerly and moister countries. In many countries the quantity produced far exceeds that of wheat. This is particularly the case in Russia, where oats are grown to nearly, but not quite the same extent as rye; in Germany, where the oat-crop is about two and a half times that of wheat; in the United Kingdom, where, owing to its great cultivation in the northern part of England, and in Ireland and Scotland, its crop doubles that of the wheat; in the Scandinavian countries, where the disproportion between its growth and that of wheat far exceeds that in the larger countries already named. On the other hand, in France the crop is less than that of wheat, while in Italy, Spain, and Turkey it is extremely insignificant in comparison. Passing from Europe, it is the most important crop in Canada, and grown in the United States in greater quantities than wheat.

The amount that enters into international trade is about 100 million bushels, or perhaps a tenth of the total production. It is imported largely by the United Kingdom, chiefly from Russia, the United States, and Sweden.

**Maize.**—This is one of the important presents that America has made to the Old World. It is a very productive crop, but, owing to the nature of its requirements, cannot be grown in many countries where the other cereals are freely cultivated. It demands a long summer without frost, abundant sunshine, and a sufficiency of moisture. Thus it does not grow in the United Kingdom, Germany,

or the countries of Northern Europe. Of all European countries, it grows best in the eastern districts of Austria-Hungary, where it is nearly as important a crop as wheat or oats, in Italy, in Roumania; while Spain, Turkey, Portugal, Servia, and Southern France cultivate it with success. It is grown in the Argentine, and in the United States it is pre-eminently the most important crop. There it has shown the same tendency as wheat—to proceed westward. It is chiefly grown in the following states—Iowa, Illinois, Missouri, Nebraska, Kansas, Indiana; whereas in 1886 the leading states were Illinois, Indiana, Ohio, Michigan, Minnesota, Iowa. Of late years the production of maize in the United States has increased despite its variability.

| Average of Years. | Million Bushels. |
|---|---|
| 1880-84 | 1,575 |
| 1888 | 1,987 |
| 1889 | 2,112 |
| 1893 | 1,619 |

Of this amount, so far as 1888 was concerned, it is reckoned that the home consumption amounted to $29\frac{1}{2}$ bushels a head.

Maize enters more largely into commerce than any grain, with the exception of wheat, which, however, it does not approach in commercial importance. From the different producing countries some 180 million bushels are exported. Among these the United States is by far the most important, other countries being Russia, Austria-Hungary, Roumania, Argentine Republic.

The remaining grain foods are much less valuable than the preceding. Among them are *buckwheat*, which, though not grown in the United Kingdom, is cultivated to a considerable extent in Russia and France, both countries exporting to England, and in the United States; *millet*, which in both its kinds forms an important product in India, and enters into the consumption of the poorer peasants in Italy.

## 2. Certain Substitutes for Bread Foods.

These are two in number—*potatoes* in the more developed regions where grain foods are too expensive or for other reasons not easily available, *rice* in the East.

*Potatoes.*—The potato, a plant which was probably introduced into Northern Europe by way of Italy, did not become a popular and important food till comparatively recent times. At the present time there are at least two countries, Ireland and North Germany, where for the poorer classes it takes as important a place as grain foods. It was cultivated in Ireland somewhat earlier than in England, and the production in that country is very high when contrasted with the number of the population. The potato crop in some of the more important countries was in 1889—

| | Million Tons. |
|---|---|
| Germany | 26 |
| Russia | 13¾ |
| Austria-Hungary | 12½ |
| France | 10½ |
| United States | 5¾ |
| Great Britain | 3½ |
| Ireland | 2¾ |
| Belgium | 2¾ |
| Holland | 2 |
| Sweden | 2 |

These figures, which are given in round numbers, show the very varying importance attached to this plant by the different countries. Only three nations import potatoes to any considerable extent, the United Kingdom, the United States, and Switzerland. They derive their foreign supplies chiefly from Germany, France, and Russia.

*Rice.*—Rice is grown under very particular conditions. It requires two things—a very high summer temperature, and fields which can be flooded at certain periods of its

growth.[1] It is grown chiefly on low lands near the sea, river deltas offering particular advantages. Thus at one time it was cultivated with great success in the swamps of South Carolina, in Georgia and Louisiana, though the importance of this district as a rice-producing country has declined very greatly since the abolition of slavery and since the rise into prominence of the south and south-eastern countries of Asia, *e.g.* British India, with Burmah, China, Indo-China, Siam, Japan, etc.

In these countries, which contain a large population, rice is a very important food crop. At one time it was said that it formed the food of one-half of the population of the world, and though this is now regarded as an exaggeration, the number depending upon it is variously estimated as from 400 to 500 millions. These dwell in Japan, Indo-China, and in certain parts of India and China. In these two latter countries rice is the staple food of the most densely-populated districts, as, for instance, the Ganges valley, but by no means of the whole country. In British India, for instance, a considerable quantity of wheat is consumed. Outside this part of the world rice is grown in Asia Minor, Egypt, Italy, and Spain.

In India the total produce amounts to some 330 million hundredweights, which is very unequally derived from the various districts. The amount of land under rice cultivation in the more important of these is shown in the table below. In order to exhibit the dense populations which exist in the districts where rice is largely cultivated, the density of population per square mile has been added. The two columns taken together will also afford some indication of the purport of the rice-growing, whether for home or local consumption, or for exportation. Lower Burmah occupies an almost unique position. It has a high production of rice and a low population. It is from this province that the greatest amount of Indian rice exports proceed, the direct imports into the United Kingdom coming chiefly from Lower Burmah and Bengal.

[1] Upland rice or hill rice, which thrives on a drier soil, is produced in comparatively small quantities.

| Land under rice, 1890-91. | In thousand acres. | Density of population per square mile. |
|---|---|---|
| Bengal | ... | 473 |
| Madras | 6,159 | 248 |
| N.-W. Provinces | 4,771 | 442 |
| Oudh | 2,797 | |
| Central Provinces | 4,005 | 127 |
| Lower Burmah | 4,398 | 52 |
| Bombay | 2,297 | 150 |
| Upper Burmah | 1,350 | 43 |
| Assam | 1,275 | 116 |
| Punjab | 692 | 187 |

### 3. Pulses.

Owing to their extremely nutritious characteristics, leguminous vegetables hold an important position in the diet of many nations. The varieties of most importance are common peas and beans, lentils, chickpeas, and soya-beans.

*Peas* are cultivated widely in the northern portion of Europe and in the countries of North America (the United States and Canada), whence the United Kingdom derives about three-fourths of her entire import.

*Beans* are also grown in the north of Europe and America, but some varieties flourish more richly in the warmer zones. Of these the *soya-bean* is important. It is grown and consumed most largely in China, Japan, and Egypt, the latter country being very prominent in its exports both of beans and lentils to the United Kingdom. *Lentils* are grown in both northerly and southerly climates, with particular advantage in India and Egypt. The *chickpea* is a native of Southern Europe and the East.

## ii. Meat and Cattle and Animal Products.

### 1. Meat and Cattle.

Recent times have seen a great change in the circumstances of the meat supply.[1] On the one hand, a rapid increase in the population has been accompanied by great increase in the quantity of meat food consumed per head of that population. On the other hand, the development of industries and the growth of towns have prevented a corresponding increase in the number of cattle, etc., kept in the more thickly-populated countries, even when they have not occasioned a positive decrease. The new organisation of the meat supply has become an urgent matter both for the consumers, to whose interest it is that the international trade in cattle and meat should be rapidly developed, and for the home farmer, who looks on foreign competition with a natural anxiety. So far as Europe is concerned, the increase in the number of the animals which go to form the food supply has been far outstripped by the increase in the number of those who are there to eat them. This has taken place despite an actual increase in the former. During the years 1852-57 the stock in European countries was—of cattle 87 millions, of sheep 177 millions, of pigs 38 millions; in the years 1865-85 there were, on an average—cattle 94 millions, sheep 169 millions, pigs 43 millions; while the average from 1880-85 was—cattle 94 millions, sheep 180 millions, pigs 44 millions. The following table, however, will show how greatly the number fell proportionately to the population.

[1] Many of the following comparative statistics are drawn from the *Uebersichten*, etc.

POPULATION AND CATTLE, ETC., IN EUROPE (MOST COUNTRIES IN).

| In the periods | Population in millions. | Numbers per 1000 inhabitants. | | |
|---|---|---|---|---|
| | | Cattle. | Sheep. | Pigs. |
| 1865-74 | 278 | 331 | 700 | 152 |
| 1873-82 | 304 | 302 | 568 | 140 |
| 1878-85 | 313 | 302 | 539 | 138 |
| 1880-89 | 341 | 300 | 549 | 137 |

In some countries, as, for instance, the United Kingdom, the last few years have seen a slight rise in the number of cattle and sheep kept proportionate to the population.

The comparison between the numbers of the population and of the cattle, etc., varies of course in the case of the separate countries of Europe. The relation holding good of recent years in some of the more important of these and of the United States merits careful notice.

| Countries. | Per 1000 inhabitants. | | |
|---|---|---|---|
| | Cattle. | Sheep. | Pigs. |
| United Kingdom . | 269 | 772 | 101 |
| Germany . . | 345 | 419 | 201 |
| France . . | 349 | 591 | 152 |
| Belgium . . | 251 | 66 | 117 |
| Austria-Hungary . | 368 | 390 | 208 |
| *Denmark* . . | 683 | 573 | 361 |
| *United States* . | 840 | 705 | 820 |

The position of these two latter countries is very significant in comparison with that held by the thickly-populated industrial countries of Western Europe, *e.g.* United Kingdom, Belgium, Germany, France. Nor are these latter less given to a large individual consumption of meat. By computing the quantity of meat consumed, both that raised in the country and that brought from abroad, in any one country, and dividing it by the number of the population of that country, it is reckoned that the amount consumed by the average individual is in

| | | | |
|---|---|---|---|
| The United Kingdom | 124 lbs. | Belgium | 77 lbs. |
| France | 84 ,, | Holland | 77 ,, |
| Denmark | 79 ,, | Austria-Hungary | 48 ,, |
| Germany | 77 ,, | Italy | 24 ,, |

Most nations consume a much greater amount of beef than of mutton, Austria-Hungary being the only important country in which this proportion is reversed.

From a comparison of this table with the one which gives the number of live beasts proportionate to the population in the various countries, it is obvious that some of the countries have too many, others too few for their own consumption. Consequently some nations will have to buy meat and cattle from others.

*A very large and valuable trade takes place in cattle and meats.* Leaving out of count bacon, this is worth about £50,000,000. About half of this value consists in live beasts, cattle, sheep, goats, and pigs, the other half being meat, fresh, salted, or dried. In this trade a great many countries take part, for even those which raise about as much as they require send some kinds of their meat abroad and import other meat which they want.

The chief importing[1] countries are—

| | | |
|---|---|---|
| The United Kingdom, | with a net import | £29,000,000. |
| France | ,, ,, | £2,500,000. |

The chief exporting countries are—

| | | |
|---|---|---|
| The United States, | with a net export | £22,000,000. |
| Germany | ,, ,, | £3,000,000. |
| Argentine and Uruguay | ,, ,, | £2,800,000. |
| Denmark | ,, ,, | £2,500,000. |

**The United Kingdom.**—Above all countries the United Kingdom depends upon foreign countries for its meat supply. During the twenty-five years from 1865 to 1890, while its population increased very largely, the number deriving their living from rural pursuits decreased; the average consumption

[1] Countries which import meat (live or dead) exceeding in quantity what they export.

per head rose from 100 lbs. to 124 lbs.; and the proportion of foreign meat in this consumption rose from 7 per cent to 33 per cent. In 1868, of the 100 lbs. which each person may be supposed to have eaten, 93 lbs. were raised at home and only 7 lbs. imported; while in 1890, of the 124 lbs., 83 were raised at home and 41 imported. The United Kingdom obtains its supplies from all parts of the world—cattle from the United States and Canada; sheep and pigs from the same countries; fresh beef from the United States, Australasia, Argentine Republic, and Canada; salt beef from the United States, Canada, Australasia; fresh mutton from New Zealand, Australia, United States, Argentine Republic, Canada; various kinds of preserved meat from Uruguay, Argentine, and Brazil; salt pork from United States and Canada; ham and bacon from the United States and Canada.

**France.**—Though France is much more able to satisfy the demand of her people for meat than is the United Kingdom, it is compelled to resort to foreign nations for a certain portion of it. Foreign imports of meat are to some extent discouraged by the custom duties levied on the frontier or at the ports of entry. The countries from which France is supplied are chiefly continental, though in many cases meat comes to it from across the seas through another country. For instance, some American meat comes through Belgium; live stock comes chiefly from Algiers and Germany; fresh meat from Germany and Austria; salted meats either from or through the above-named countries, and through Belgium.

**The United States.**—Besides providing for its own increasing and improving population, the United States has, during the last twenty years, entered on a vast trade of cattle and meat exportation. For rearing live stock there are many advantages. To them is devoted the immense tract of country that includes the rolling grass lands and plains, a territory about as large as Europe. It includes Texas, the Indian Territory, and large parts of Idaho, Wyoming, Montana, Utah, Arizona, New Mexico, Colorado, Nevada, and some portions of California, Oregon,

and Washington. Other states in the West Central are also largely given up to the business of rearing live stock. Among the states standing highest in live stock are—Texas, Ohio, Indiana, Illinois, Wisconsin, Iowa, Missouri, Kansas, and Nebraska. Taking sheep alone, we find also rich districts towards the Pacific — California, New Mexico, Oregon, Utah, Montana, etc. So great has been the activity of some of these districts that, despite the increase in population, the growth in the number of *cattle* has been even greater, the proportion per 1000 inhabitants rising from 767 in 1850 to 840 in 1889. Sheep and pigs, when measured by the same standard, have, however, diminished. Even in them the United States still contrasts very favourably with the countries of Europe.

Two other circumstances have largely influenced stock farming, so far as it is concerned with an export trade—the comparative low prices ruling in America, and the remarkable development of locomotion and trade organisation. Low prices have enabled the farmers to compete with their stock in foreign lands against the home farmers, though during the more recent years prices have fallen so much, owing to excessive competition in the United States, that stock farming is no longer so profitable as it once was, and many ranches have been deserted and lie idle. On the other hand, the improvements in the transport service are all to the benefit of the western cattle and sheep states. From these states meat is forwarded to the more crowded East. In this transit an important part is played by Chicago, St. Louis, Kansas City, Omaha, and Peoria, which serve as collecting places, whence stock may be farther forwarded. If destined for foreign countries they are shipped on board specially constructed vessels on their arrival at the eastern ports. At the collecting places, however, a great portion of the stock is slaughtered, and then either forwarded in the refrigerating carriages or salted and canned before being sent on. The latter processes combine to form one of the great industries of Chicago and St. Louis. In the former city the curing and preparing of bacon, ham, and pork are carried on with a

perfection and to an extent unknown in Europe, about 4 million pigs being slaughtered and cured annually.

**Argentine Republic and Uruguay.** — Both these countries have large herds of live stock, especially of cattle and sheep. The latter, however, are an object of attention chiefly on account of their wool. The number of cattle and sheep per 1000 inhabitants is—

| | Cattle. | Sheep. |
|---|---|---|
| Argentine . . . . . | 5,789 | 17,581 |
| Uruguay . . . . . | 13,576 | 37,426 |

In the last-named country the increase during recent years has been very great. A large number of cattle in each country are sent to the saladeros to be slaughtered and for their meat to be prepared for export to foreign lands. Among other forms which this preparation takes may be mentioned that of meat extract, the Liebig saladero being at Fray Bentos in Uruguay.

Of the meat exports from these countries, live cattle and plain salted meat go chiefly to the other countries of South and Central America. To Europe and especially to the United Kingdom go the more finely-prepared meat, the salted tongues and the supplies of fresh frozen meat. After the United Kingdom rank France, Spain, and Belgium.

The exports of cattle and meat from *Germany* and *Denmark* are chiefly sent to the neighbouring countries.

## 2. Some Animal Products.

**Butter.**—The consumption of butter in Europe has largely increased during the present century owing to the general improvements in the comfort in which people live. In consequence of this increased demand the price has risen so much that cheaper substitutes for it have been sought, one of which, *margarine*, has become an article of great importance. By means of improvement both in the processes of manufacture and in the rapidity of transport, countries which do not produce sufficient butter for their own needs are able to import it from abroad. Both the

United Kingdom and Belgium import butter, the latter to the value of £500,000. But the imports into the United Kingdom are far larger. In 1890 it imported butter to the value of nearly £12,000,000, and margarine to the value of over £3,000,000. The chief countries which produce butter for other countries are Denmark, France, Holland, and Sweden, from each of which the United Kingdom obtains a large quantity. The chief country producing and exporting margarine is Holland.

**Cheese.**—The manufacture of cheese, like that of butter, is common to most countries. But in this case, too, some countries have to rely upon foreign production for part of their supply. Both the United Kingdom and France, though they produce a great quantity of cheese, are placed in this position. Holland can provide them with a good deal; but in the case of the United Kingdom, the United States and Canada are far more important. From these two countries it obtains about four-fifths of its total import. Of recent years Canada has devoted considerable attention to the manufacture of cheese for foreign markets, its exports in 1890 being three or four times as great as those of 1874. Finer kinds of cheese are made in Switzerland and Italy.

**Eggs.**—A considerable trade is carried on in eggs, large quantities of which are exported annually from France, Holland, Belgium, Denmark, and Russia.

### 3. Fisheries.

To some countries fish, the "harvest of the sea," is nearly as important as the yield of the fields. It affords a main article of support to the maritime inhabitants of China, and together with rice constitutes the food of the greater portion of Japan, where it has been calculated that no fewer than 1½ millions of people are engaged in the fisheries. In Norway the unfavourable conditions of climate and soil have driven the people to seek their support from the sea, whence they land fish both for their own use and for export.

In some countries the value of the annual catch of fish

is very great. Thus the annual product of the United Kingdom sea-fishers has been variously stated at £10,000,000 or £13,000,000, while the sea fisheries of the United States were estimated (1880) as yielding over £8,000,000. But if the produce of the large lake fisheries, of the rivers and of the oyster-beds, be included in the account of the fisheries of the latter, the value may be put, as it has been put by one observer, at no less than £22,000,000. The value of all the Canadian fisheries in 1890 nearly reached £4,000,000. The fisheries of the colony of Newfoundland may be reckoned as worth about another million.

There are two great fishing districts in the world: the one the North Sea; the other the Western Atlantic adjoining the coast of Newfoundland, Nova Scotia, New Brunswick, Prince Edward Isle, Quebec, and the New England States. While the fishing in the open sea is free to every nation, treaties have been made to determine the rights of inshore fishing in this latter district. The chief fish caught in this large district are *cod, mackerel, herring, haddock, and hake.* A large number of lobsters are also taken near the shores.

The North Sea fisheries are shared amongst the fishermen from Scotland, England, Holland, and the Scandinavian countries. Their total value has been estimated at £25,000,000. They comprise *herring, cod, mackerel, haddock, sole, whiting,* etc. The chief fishing ports in England are London, Grimsby, Hull, Lowestoft, and Yarmouth; and in Scotland, Wick, Peterhead, and Lerwick. The herring fisheries of France and Holland are also important.

The chief places where *salmon* fishing is largely carried on are in Norway, and to a much greater extent British Columbia and the American States bordering on the Pacific. On the Columbia and Fraser rivers salmon is caught, then "canned" and exported.

The oyster-beds of the United States are valuable not only for home consumption, but for export. They lie chiefly in the states of Maryland and those adjoining. In

England oysters are found near Whitstable, in France on the coast of Brittany, in Belgium near Ostend, in Holland near Texel, and off the island of Zeeland.

From the Mediterranean come the *sardine* (prepared chiefly in France), the *anchovy*, and the *tunny*. The sardine is also caught on the west coast of France. The *pilchard* is caught off the coast of Cornwall.

### iii. Less necessary Food Commodities—Groceries, etc.

The articles included in this category are chiefly those which, though useful and pleasing, do not constitute the *essential sustenance* of any body of people. The chief commodities are sugar, coffee, tea, cocoa; but besides these there are a number of minor articles.

#### 1. Sugar.

The increase in the use of sugar since 1875-79 has been remarkable. With the exceptions of Belgium and Italy every important European country consumed more sugar annually on the average of the period 1885-89 than on that of the earlier period. In the United Kingdom the consumption per head has increased from 57 to 70 lbs.; in the United States from 35 to 53; in France from 18 to 22; and in Germany from 13 to nearly 16 lbs. Of course a great deal of this use of sugar is indirect, as sugar is used in the manufacture of so many articles, as jam, confectionery, beer, etc.

There are two kinds of sugar—beetroot sugar and cane sugar. Cane sugar was used in times of antiquity, and till very recent years held a supremacy hardly interfered with by the small amount of sugar produced from the beet. But now beetroot sugar, as the following table shows, has not only proved itself no mean rival, but become victorious in the struggle for the first place.

YEARLY PRODUCTION OF SUGAR IN TONS.

| | 1884-85. | 1888-89. | 1889-90. |
|---|---|---|---|
| Cane Sugar . | 2,400,000 | 2,200,000 | 2,300,000 |
| Beet Sugar . | 2,500,000 | 2,700,000 | 3,600,000 |
| Total . . | 4,900,000 | 4,900,000 | 5,900,000 |

These estimates, though only approximate, represent very fairly the change that has been taking place. The countries producing beet sugar are very differently situated as to geographical position and climate from those in which the cane grows. The sugar-cane requires a moist soil and a hot temperature, flourishing best in the tropical countries. It was introduced into Southern Europe by the Arabs, and thence transplanted to the West Indies, where its spread was rapid. On the other hand, beetroot is grown in the countries of Northern Europe in a temperate but not always a clement climate.

The chief countries engaged in the production of *beet sugar* are—

Germany, with a production of about 1¼ million tons.
France ,, ,, ⅝ ,, ,,

Other large producers are Austria, Russia, and Belgium, while Holland and other countries add to the production in smaller amounts.

*Germany.*—The progress of the beet cultivation and of the sugar industry has been very rapid during the last thirty years, owing very largely to the measures of protection taken by the Government. At the present time there are some 400 factories at work, half of which are situated in the Prussian provinces of Saxony and Hanover and in Brunswick, where the beetroot fields occupy large stretches of country. Magdeburg is, as it were, the sugar capital of this district. Sugar production takes place also in Silesia and Anhalt. Of the sugar exported from Germany more than half goes to the

United Kingdom, after which Holland, the United States, and Sweden rank as good customers.

*France.*—France, though it entered on the production of beet sugar before any other nation, has been compelled to yield the first place to Germany. Of late years its production has been uncertain. The chief sugar districts are in the north, near Lille, Amiens, Rouen, and also near Nantes, Orleans, and Bordeaux. Its exports go chiefly to the United Kingdom, Portugal, Belgium, so far as raw sugar is concerned. Refined sugar it sends to the United Kingdom, Switzerland, Turkey, etc. France, however, now imports more raw sugar than she exports. Her refineries, especially so far as the better sorts of sugar are concerned, are among the best in the world.

*Austria-Hungary* produces largely, chiefly in Moravia, Hungary, Silesia, Lower Austria, and Galicia, and has an export both of raw and refined sugar. It sends sugar into Germany, to the United Kingdom, Italy, etc.

The chief countries producing cane sugar lie in two different parts of the globe; roughly speaking, divisible into the East Indies and the West Indies. Of these the more important are—

| | | Tons. |
|---|---|---|
| Cuba | producing | 650,000 |
| Demerara | ,, | 115,000 |
| Porto Rico | ,, | 70,000 |
| Java | ,, | 310,000 |
| Manila, etc. | ,, | 180,000 |
| Mauritius | ,, | 125,000 |
| Brazil | ,, | 170,000 |
| Louisiana | ,, | 125,000 |

As may be seen, the countries in the West Indies and America are considerably the more important. In addition to the countries named, sugar is largely produced in Trinidad, Barbadoes, Jamaica, Antigua, Martinique, Guadeloupe, Sandwich Islands, British India, Madura, Mexico, Egypt. Much of the cane sugar is sent to the United States. This occurs in the case of Cuba, Porto Rico, and even in the

case of the British West Indies and the Sandwich Islands. From Mauritius about nine-tenths of the total product goes to Australasia and India; from the Dutch East Indies the sugar goes to the United States and over Singapore; from the Philippines chiefly to the former.

The most important importing countries are the United Kingdom and the United States. The United Kingdom imported (1892) in raw sugar 8 million cwts. from the continent of Europe (beet), and over 7 million cwts. of cane sugar from Java, British West Indies, British India, Philippines, etc. She also imported over 10 million cwts. of refined sugar, chiefly from Germany, France, and Holland. Into the United States the import of raw sugar (nearly all cane, and most from the West Indies) has risen from 10 million cwts. in 1870 to 26 million cwts. in 1890.

*The principal export countries* are, in their order of importance, *for raw sugar*—Cuba, Germany, Dutch East Indies, British West Indies, Brazil, Philippine Islands, Mauritius, Belgium, Sandwich Islands, Austria-Hungary; *for refined sugar*—Austria-Hungary, Germany, France. If we take account of both, Germany stands out as the most important.

Of late years some mills in the United States have begun to produce sugar from *sorghum*, an African corn-plant. The industry is likely to become very important.

### 2. Coffee.

The districts within which the coffee plant is cultivated are determined, firstly, by its excessive dependence on climate. It requires considerable warmth and moisture, and so, speaking broadly, will not flourish outside the tropics. It must be fairly sheltered from winds, and grows best on a soil formed of decomposed vegetable matter. The most desirable elevation is some 3000 feet above sea level. Secondly, the fact that it is grown largely in view of export to foreign markets restricts its cultivation to localities conveniently or reasonably near to ports. Its use in certain countries is very great. The annual consumption

per head during the period 1885-89 was in Holland over 10 lbs.; in Belgium it was 9 lbs.; in the United States 8 lbs.; in Norway 7½ lbs.; on the other hand, in Germany, during the same period, it was only 5 lbs.; in France 3½ lbs.; and in the United Kingdom not quite 1 lb. To all these countries it has to come from the lands where it is grown. The chief countries producing and exporting coffee are, with their estimated quantities[1]—

| | | Thousand cwts. |
|---|---|---|
| Brazil | exports | about 3,720 |
| Java and Dutch East Indies | produce | ,, 697 |
| Venezuela | exports | ,, 380 |
| Guatemala | produces | ,, 310 |
| Hayti | exports | ,, 260 |

In addition, coffee is grown in Porto Rico, British India and Ceylon, San Salvador, Colombia, Mexico, Philippine Islands, British West Indies, etc. The total production is certainly not short of 8 million cwts. Small quantities are produced in Arabia, etc.

*Brazil* is by far *the most important country engaged in the coffee trade.* In addition to the large amount which it exports, it raises a great deal for the home consumption. The chief coffee states are Rio de Janeiro and San Paulo, assisted to their position by climatic advantages and the good railway communication which exists respectively with the ports of Santos and Rio de Janeiro. The plantations lie on the hills at some little distance from the sea. Next to these states come Minas-Geraes, Ceara, Pernambuco, Para, Bahia, and Rio Grande do Sul. Of late years the principal extension of plantations has taken place in San Paulo and Para. Brazil furnishes half the amount of coffee sent to the markets of America and Europe, and as the quantity consumed in the country itself is large, its yearly harvest must be a very great one.

[1] Statistics compiled in the *Uebersichten.*

### 3. Tea.

The United Kingdom makes up by its large consumption of tea for its comparatively small use of coffee. Distributed per head of the population this amounts to 5 lbs., a quantity much exceeded in the Australian colonies with an annual average of $7\frac{1}{4}$ lbs. per head. Next to the United Kingdom come Canada with $3\frac{3}{4}$ lbs., the United States with $1\frac{1}{4}$ lbs., Holland with a little more than 1 lb., and Russia with a consumption per head of $\frac{1}{2}$ lb. The consumption of tea in China itself, though unestimated, is probably much greater than that of any other country.

Tea is by no means so susceptible to cold as coffee, and in consequence the range of its cultivation is much greater. It demands an even and warm temperature, and owing to its need of moisture and yet liability to damage from excessive dampness at the roots, grows best on sloping land with a system of natural drainage. It is owing to this that the lower slopes of the Himalayas offer so fine a field for its cultivation. Till comparatively recent years the production was almost entirely a Chinese monopoly, but now that country has found a powerful and rapidly growing rival in British India, which, together with Ceylon, threatens to outstrip it. In the case of tea sent to the United Kingdom this has already occurred, in 1890 that country receiving from British India and Ceylon 145 million lbs., and from China and Hong-Kong nearly 74 million lbs. The principal countries exporting tea in 1889 were—

| | | Million lbs. |
|---|---|---|
| China | with total export | 257 |
| British India | ,, ,, | 103 |
| Japan | ,, ,, | 62 |
| Ceylon | ,, ,, | 33 |
| Java and Madura | ,, ,, | 7 |

Of these countries the most rapidly increasing are British India—where a great extension of cultivation has taken place in Assam and Bengal—and Ceylon, where on many

plantations tea has of late years been substituted for coffee. Of the export from China, Russia takes about 41 per cent, the United Kingdom 29 per cent, the United States 17 per cent, and Australasia about 6 per cent. In the case of British India the proportions are very different, the United Kingdom taking more than 95 per cent of the whole.

In China the chief production of tea takes place in several provinces, of which the principal is Fu-chien.

### 4. Cacao.

Cacao, or, as it is generally called, cocoa, is used as a substitute for coffee or tea to some extent in other countries, but to a very great extent in Spain and Portugal, and in those countries of Central and Southern America which lie near the Equator. It is in these latter that it is produced, *requiring as it does a very warm and very moist climate.* The chief countries producing it are Ecuador, Venezuela (Caracas), Brazil (Amazonas), San Salvador, Trinidad, Martinique. In Europe it is very largely used for the manufacture of chocolate, particularly in France, Switzerland, and England.

### 5. Salt.

Salt is one of the great auxiliary requisites of the human race. It is needed as an article of consumption, especially among people restricted to a vegetable diet; it is required in agriculture and for the support of live stock; and it is used in many manufactures, as, for instance, chemicals and glass. A great quantity of salt is annually required in the various processes of meat preservation, etc. Very fortunately so universal a requirement is widely produced. Its supply comes from various sources, from the seashore, marshes, and inlets from the sea, by evaporation, from salt mines, and from brine springs. In some form or other nearly all countries have a good supply. This is particularly the case in British India, where the salt for revenue purposes has been made subject to Government monopoly, and in China and Japan. In Europe the chief countries

producing salt in large amounts are the United Kingdom, where the annual output exceeds on the average 2 million tons, taking place chiefly in the counties of Cheshire and Worcestershire; Russia, with a yield of a little more than 1 million tons, where the principal salt mines are in the Ural and Astrachan. In Germany the production of salt is somewhat widely spread, there being important salt mines near Stassfurt and Erfurt in Saxony, near Stettin, and also in Würtemberg. The total yield in Germany has been reckoned at 1 million tons, a figure which it usually exceeds. In France the yield amounts to only one-half of the foregoing, the most important department being that of Meurthe-Moselle. In Austria-Hungary, which, like France, produces some half million tons, there are *very important* mines in Galicia at Wieliczka, and at Marmaros and Maros in Hungary. The united production of Spain and Portugal is some three-quarters of a million tons. There are valuable deposits in the Austrian and Bavarian Alps, in the Vosges, and in the Pyrenees. The use of salt in the United Kingdom is very large.

### 6. Miscellaneous Products.

**Farinaceous Starch Foods.**—*Sago* is obtained from certain species of palms. The sago palm grows most favourably in the hot swampy islands of the Malay Archipelago, also in the Moluccas, New Guinea, Borneo, and the Philippine Islands. From these places the sago, which is the pith, is taken to Singapore, where it is prepared in different ways for the European markets. It is mostly sent to England and thence distributed over the continent. *Tapioca* is produced from the roots of the mandioc or cassava plant, which is largely cultivated in the West Indies, whence the United Kingdom derives its chief supply. A certain quantity is sent to Europe over Singapore; and a considerable cultivation, chiefly for home consumption, takes place also in South America and some of the South Sea Islands. *Arrowroot* is a native of tropical America and the West Indies, among which latter Jamaica is important.

**Southern and other Fruits.**—In addition to the better known fruits, which grow so widely throughout the temperate regions of Europe, there are certain fruits, chiefly known as southern fruits, which form a valuable article in the trade between different countries. *Oranges and lemons* come to the markets of the northern European countries chiefly from the European and other countries bordering the Mediterranean. Spain, Portugal, Italy, and Sicily are important producing lands. In the United States oranges are produced in the greatest plenty in Florida. *Currants* are the raisins of a very small grape, growing luxuriantly in Greece and the Grecian Isles. They are dried, pressed into casks, and exported. *Raisins*, of which there are several kinds, are chiefly produced in Asia Minor, in the country round Smyrna (whence come the *sultana* raisins), and the islands of Samos and Cos, in Spain (whence, in addition to the more common kinds, the muscatels are exported), and in Calabria in Italy. *Figs* are grown in Southern Europe, and largely in Asia Minor and Northern Africa. Large imports enter the United Kingdom from Turkey.

**Spices and Condiments.**—Of *pepper* there are two important kinds—white and black pepper and cayenne pepper. White and black pepper, the ordinary pepper, are the product of the same plant, which is indigenous to the hot districts of South-Eastern Asia, being cultivated mainly in the Moluccas, Sumatra, the Malay Archipelago, and in the Malabar Coast of British India. Most of the supply sent to Europe is collected at and exported from Singapore. *Cayenne* pepper is from an entirely different plant. It is grown in the East and West Indies, in South America, Spain, Southern France, and Hungary. *Ginger*, which is largely grown in its original home in South-Eastern Africa, was early introduced into the West Indies. Jamaica ginger is well known among the gingers imported into the United Kingdom. *Cinnamon* is best produced in Ceylon and other south-eastern islands. Though its cultivation has been extended to other places in the West Indies and South America, the products of these countries are not so highly

valued. *Nutmegs and cloves* are obtained from the Moluccas. Attempts have been made to extend their cultivation, and in the case of cloves not without considerable success. *Allspice* is grown in the West Indies, particularly in Jamaica. *Vanilla* in Mexico, West Indies, and Central and South America. *Aniseed*, indigenous to Egypt, is also cultivated in Southern Europe, Germany, and East Indies. *Mustard* is very generally grown, as also is *saffron*, the best saffron coming from Austria.

**Medicinal Products.**—Among these an important place is held by *opium*, which, however, is more used in certain of its forms as a pleasurable narcotic. Opium smoking is a prevalent custom in certain parts of India and in China. The opium poppy is a native of Persia and Asia Minor, and the production of opium takes place in both these countries, as well as in Egypt, Greece, Algiers, etc. But the two most important countries producing opium are British India and China. In the latter country it is prepared for home use. British India produces a very large amount of opium, chiefly for export to China. The annual export of opium to China is about 120,000 cwts. In India opium is chiefly grown in Bengal (near Patna), Malwa, Rajputana, and to a limited extent in the Central Provinces and the Punjab. The most valuable is Turkish opium. *Quinine* is one of the preparations made from the bark of the cinchona, which, in all its species, is indigenous to the eastern sides of the Andes from a little N. to 20° S. During recent years it has been introduced into other countries, as India (where its cultivation has been attended with great success), Java, Ceylon, Jamaica. The chief countries supplying the European markets are Colombia and Ceylon. *Strychnine* is produced from the seeds of the nux-vomica, which grows in Ceylon and on the Coromandel Coast. *Camphor* comes principally from the Island of Formosa.

**Miscellaneous.**—As *vinegar* is prepared from young and poor wines by some fermentation, its production takes place in the wine countries, and especially in France, Germany, and Italy, all of which countries export considerable quantities. An inferior vinegar is made from wood by

a particular mode of distillation. *Onions* are a considerable import into the United Kingdom, which procures its supplies from Egypt, Spain, and Holland. *Lard* (swine's fat) is produced in most countries, but as an article of export it is despatched chiefly from the United States. *Yeast*, used in baking, is produced in the process of brewing. It is also imported into the United Kingdom in a dry form from Holland, France, and Germany.

## iv. Wine, Beer, and Spirits.

### 1. Wine.

An average wine year is reckoned at a yield of over 2800 million gallons. Owing to the great differences in quality it is impossible to calculate its value at all closely, estimates varying from about £80,000,000 to £160,000,000. Even the lower of these two suffices to display the importance of wine in connection with industry and trade.

There is a great difference in the consumption of wine in the countries of Europe. If the total amount consumed be divided among the population, the nations leading the way with the highest individual consumption are Spain (201 pints annually), Greece (191 pints), Bulgaria (182 pints), Portugal (166 pints), Italy (166 pints). Passing to the more important nations, the consumption per head in France is 165 pints, in Germany 8 pints, in Belgium 4 pints, and in the United Kingdom 2 pints. The first three countries mentioned, Spain, Greece, and Bulgaria, produce a cheap and not highly valued wine and drink it.

The foremost wine-producing countries are—

Annual Wine Production of leading Countries.[1]
Average of period 1886-90.

| Countries. | Million Gallons. |
|---|---|
| Italy | 677 |
| Spain | 655 |
| France | 605 |

[1] Drawn from the *Uebersichten*, etc.

| Countries. | Million Gallons. |
|---|---|
| Austria-Hungary . . . . . | 209 |
| Portugal (1890) about . . . . . | 132 |
| Russia ,, . . . . . | 52 |
| Germany . . . . . | 50 |

The wines of all these countries, with the exception of Russia, enter into trade.

*France.*—France, though inferior in quantity to both Italy and Spain, stands first, if we look at the value of its wines and their importance, in Europe. At one time France produced a greater quantity of wine than any other country, but of recent years, since 1880, its production has diminished considerably owing to destruction wrought by the phylloxera, and in a less degree by the mildew. Vine-growing is widespread, extending through seventy-six departments, of which the two most important, with reference to quality of wine produced, are Hérault and Aude. The wine districts are three—the Bordeaux district, the Burgundy district, the Champagne district. The Bordeaux district produces the ordinary red wine, and includes among its leading departments the two already noted, and Gironde, Charente-Inférieure, Dordogne, Charente. The chief departments in the Burgundy district are Côte d'Or and Yonne; in the Champagne country, Marne, Haute Marne, and Meurthe.

France now imports a great deal more wine than it exports, a state of things which will continue, because the wine for export is of a better quality than that which is produced or imported for home consumption. Some of the wine imported, especially that from Spain, is imported for mixing with the wine of Bordeaux. This country and Algiers are the chief sources from which France imports wine. It exports wine to all parts, especially to the United Kingdom, Switzerland, Belgium, and Germany.

*Italy.*—The wines of Italy differ very much in both character and quality. The more important districts for the production are the southern, especially Sicily, Tuscany, and Piedmont. Italy exports considerably more wine than it imports.

*Spain.*—During late years the export of wine from Spain has been increasing. Catalonia and Valencia are the largest wine-producing districts, while in Andalusia some well-famed wines are produced, as sherry and Malaga, most of which are shipped to the English market.

In *Austria-Hungary* Hungary is celebrated for its particular wines. *Portugal* sends to the United Kingdom and other countries port wine from the district of the Douro, and Madeira from the island of that name. The wine production of *Germany*, though not large in amount, is important because of the high value and quality of the wines produced in certain districts. The most important of these are situated by the Rhine, the Moselle, and the Neckar.

Of recent years wine from the United States (California) and Australia has been imported into the United Kingdom, and will, it is expected, increase in quantity. Wine is also produced in Cape Colony.

## 2. Beer.

There are two countries which stand far before all others in the amount of beer which they produce. Germany and the United Kingdom brew very nearly the same amount, the former country leading the way with an annual product of about 1160 million gallons, and the United Kingdom following with about 1145 million. Beer is very greatly drunk in both of these countries, though, judging by the quantity consumed as compared with the population, they are surpassed by Belgium and nearly approached by Denmark.

| | Beer drunk per head of the population. |
|---|---|
| Belgium | 309 pints |
| United Kingdom | 239 ,, |
| Germany | 184 ,, |
| Denmark | 178 ,, |

In no other country does the proportionate amount of beer consumed stand nearly as high. The more prominent countries are the United States, Australia, and Switzerland.

In *Germany* the beer industry is a very large one, having its most important centre in Bavaria, where there are about 7000 breweries, and in certain districts of Prussia, noticeably in the province of Saxony and near Posen. In the *United Kingdom* the chief home of the beer industry is Burton-on-Trent, where most of the large brewing firms have establishments, and in Ireland (stout and porter). The chief brewing districts in Belgium are in the provinces of Brabant, Hennegau, East and West Flanders, and Antwerp.

The production of beer makes its chief demand on barley, which, in the form of malt, forms its principal ingredient, sugar, and hops, which impart to it its slightly bitter flavour.

### 3. Spirits.

In the production of spirits there are two processes: firstly, the production of a fermented liquor; and secondly, the separation by distillation of the alcohol in the liquor. For the manufacture of spirits such substances as the following are required — grain substances, wheat, barley, rye, etc., beetroot, potatoes, fruits, and other substances containing sugar.

The production and consumption of spirits of some kinds is spread very widely over the earth, the highest consumption taking place in Russia, Scandinavia, and in the Prussian provinces of Pomerania, West Prussia, and Posen.

*Brandy* for export is chiefly produced in France, whence the United Kingdom in 1890 imported nearly 3 million (proof) gallons, and Germany.

*Gin* is largely manufactured and exported by Holland, from which country the United Kingdom obtains nearly her entire supply.

*Rum* is made from molasses and largely imported into Europe from the countries where cane sugar is produced, into the United Kingdom from British West Indies and British Guiana.

The chief spirit produced in the United Kingdom is

*whisky*, which is made in Ireland and Scotland, principally from barley malt, and which is an article of export as well as of home consumption.

### v. Tobacco.

Tobacco might be, and possibly is, grown to some extent in nearly all the countries where it is consumed. As, however, it could not be grown with the fruitful results that attend its cultivation in countries where the danger of uncertain frost is not so great, and where the climate and temperature are most favourable, the area of its effective cultivation is a little limited, though still remaining very wide. The total tobacco harvest has been estimated as amounting to about 1630 million lbs. Of this total the United States produces about 30 per cent, and British India about 22 per cent. Other very important countries are—(*a*) outside Europe in respect of quantity, Asia Minor, Dutch East Indies, Japan; and in respect of quality or kind of production, Cuba and the Philippine Islands. (*b*) In Europe in respect of quantity, Austria-Hungary, Russia, Germany, France. It is worthy of note that Austria-Hungary and Russia follow immediately after British India in the general list of the large producing lands.

In the *United States* the cultivation of tobacco is so widely spread that it takes place in no fewer than forty-two states. Of these the two most important are Kentucky and Virginia, after which follow North Carolina, Tennessee, Pennsylvania, Ohio. The export from the United States is very great, and amounts to some 250 million lbs. The production in *British India*, great though it is, is not very important in international commerce, as the consumption in the country absorbs it nearly all, some, however, being sent to Australia. The quality of the tobacco is not very good. In *Cuba* there is a great trade in cigars of a high quality, termed Havanas from the place of their export. A great quantity of cigars pass by the name of Havanas without being the produce of the island of Cuba, often, indeed,

without even passing through the island. The Manilla cigars are produced in the *Philippine Islands.*

Important and other countries with a high rate of consumption per head are—

| | Per head. |
|---|---|
| Holland | about 7 lbs. |
| Belgium | ,, 4½ ,, |
| Switzerland | ,, 4¼ ,, |
| Greece | ,, 3¾ ,, |
| Denmark | ,, 3¾ ,, |
| United States | ,, 3½ ,, |
| Germany | ,, 3½ ,, |
| France | ,, 2 ,, |

In contrast with the above the consumption in the United Kingdom is only about 1¼ lbs. per head. It derives nearly four-fifths of its total supply from the United States.

## CHAPTER II

### TEXTILE RAW MATERIALS AND THEIR MANUFACTURE

AFTER the need of food is satisfied, there is no greater and more universal want than that of clothing. Owing to the necessity of protection against the climate and the love of ornament, or for the sake of decency, clothing is a requisite in almost every land—certainly in every land where life has emerged from the earliest state of primitive culture. In some of the more backward countries the want, when felt, is supplied by the use of materials furnished ready to hand by nature, such as fur, feathers, etc. But this is not the custom in the more advanced countries. In these raw material is manufactured into cloth, etc. The raw material is textile raw material, and its manufacture represents the earlier stages of the textile spinning and weaving industries. The most important branches of the textiles are cotton, wool, flax, jute, hemp, silk.

#### 1. Cotton.

Cotton is the soft down or fibre surrounding the seeds of the cotton-plant as they lie in their capsule. After the flower is shed the capsule bursts, giving opportunity for the cotton to be plucked.

The cotton-plant, which is of several kinds, flourishes best in warm climates and in a light warm soil. Owing to its peculiar sensitiveness to frost, and to the length of time during which it must be protected from such an

influence, its cultivation is generally confined to tropical and sub-tropical regions. But within these limits it is and can be grown over a wide area. It is said to be indigenous in three continents of the world—in Asia, Africa, and America; and it has been introduced into the other two—into the southern districts of Europe,—Italy, and Spain, by the Arabs; into Australia, Queensland, of more recent times.

The importance of cotton is threefold. It is important as supplying clothing and household requisites; it is important as one of the great commercial products; it is important as maintaining a busy branch of industry.

The total production of cotton is great and increasing. In 1890 the cotton yield of the world was about 6430 million lbs., while during the period 1880-84 the annual average was some 4660 million lbs. Towards the total production three countries, the United States, British India, and Egypt, contribute some 86 per cent, that is more than four-fifths. Of these the United States is by far the most important. By reason of its enormous supply of about 4300 million lbs., and the large proportion of it exported, it rules the cotton markets of the world. Before the Civil War between the North and South its control was even greater, as the exports to Europe from other countries were of comparatively little account. India produces over 800 million and Egypt nearly 400 million lbs.

The quality of cotton is by no means uniform. It differs according to its length of fibre, its strength, its regularity, and its softness. In the trade it is classified according to its place of origin and its quality. *Sea-island* cotton, which comes from the coast of Georgia and South Carolina, is the best, has the longest staple (or greatest length of fibre), and commands the highest price. *Indian* cotton has a shorter staple. *Upland* cotton, from the inland districts of America, has a short staple. *Egyptian* is of a high quality.

*United States.*—The cotton produced in the United States is of two kinds—sea-island and upland. Of the total amount—roughly reckoned at 4500 million lbs. in

1892, in 1889 at 3400 million lbs.—the greatest amounts are produced by the following states: Texas, Georgia, Mississippi, Alabama, and South Carolina, which five states possess two-thirds of the cotton plantations. Other important states are Arkansas, Louisiana, North Carolina, Tennessee, Florida, Missouri, Virginia, Kentucky, and Kansas. The chief districts of cotton production may be described as two, that along the coast already alluded to, and that in the Mississippi valley, where is the celebrated rich cotton soil of America.

Of the cotton thus produced the United States retains a good amount at home for the supply of its own industries, which, as we shall see, are very important. Its export of cotton, however, absorbs much the larger share, amounting on an average to nearly three-fifths of the whole. Of this by far the largest quantity goes to the United Kingdom, which buys more than one-third of the entire cotton grown in the United States. Cotton is also sent in large quantities to Germany, France, and Belgium. The chief ports for the despatch of American cotton are New Orleans, Galveston, and New York.

*British India.*—The rise of India into the position of an important cotton country took place during the Civil War in America, when England, deprived of her usual supplies, fell back on India, with the result of stimulating the extension of cultivation in that country and bringing about a great increase in her exports. These, from amounting to some 460,000 bales in 1858, rose during the sixties to nearly 2 million bales. After the war was over India was not able to maintain the position it had held during its continuance. Since 1880, however, her exports have risen again, and in 1890 Indian export of cotton amounted to 660 million lbs. Since then it has again shown a decline. Of this 36 per cent goes to the United Kingdom, other countries taking large amounts of Indian cotton being Italy, Belgium, Austria-Hungary, France. India retains about one-fourth of her cotton for home manufacture, etc.

The most important districts for cotton are the presidencies of Bombay and Berar, after which rank Madras,

the North-West Provinces, the Punjab, and the Central Provinces. The plateau extending through Berar and into Bombay is the great cotton district.

Bombay is the most important port for the despatch of cotton.

*Egypt.*—The cotton produced in Egypt is of a very fine quality, and highly valued in European markets, being used for spinning a fine quality yarn. In quantity this country still comes after India, though it has, unlike India, steadily increased its exports since 1870. With occasional oscillation they advanced, till in 1890 they amounted to about 380 million lbs. Taking the last few years, Egypt may be said to be making rapid strides toward the second place as a cotton exporting country. During 1891 and 1892 it sent much more cotton to the United Kingdom than did India. The cotton is exported from Alexandria.

Other countries producing cotton are Brazil, where it is cultivated chiefly in the provinces of Pernambuco, Maranhao, Piauhy and Ceara, Asia Minor, Persia, China, where the cultivation is extending, Japan, Peru, Chili, Russia, in its Asiatic possessions and in the southern districts in Europe, West Africa, Australasia, South Africa, the West Indies, and in Europe—Italy and Greece.

The greatest users of the cotton thus produced are the United Kingdom and the United States. Taken together these two countries consume in their manufactures on an average a little more than half the cotton harvest of the year. A comparison of the amounts employed with the population shows the importance which the manufacture of cotton holds in the respective countries. The consumption then per head is, in the following countries (average of years 1886-90) :—

| | | | |
|---|---|---|---|
| United Kingdom . . | 42 lbs. | Belgium . . . | 8 lbs. |
| United States . . | 19 ,, | France . . . | 7 ,, |
| Switzerland . . . | 18 ,, | Holland . . . | 5 ,, |
| Germany . . . | 9 ,, | Russia . . . | 3 ,, |

British India, nearly 1 lb.

In the position of consumers of very large amounts of

cotton the countries stand in the following order—the United Kingdom, the United States, Germany, Russia, India, France; other countries of importance being Austria-Hungary, Italy, Spain, Switzerland, Belgium, Canada, Sweden, and Holland. Some idea of the relative activities of the leading nations may be formed from the statement of the spindles and weaving looms respectively used in the cotton manufacture.

| Countries. | Spindles. | Looms. |
|---|---|---|
| The United Kingdom | 44,500,000 | 615,700 |
| The United States | 15,500,000 | 250,000 |
| Germany | 5,500,000 | 245,000 |
| France | 4,900,000 | 72,700 |
| Russia | 3,600,000 | 90,000 |
| British India | 3,300,000 | 24,600 |

*The United Kingdom.*—Far before other nations as the United Kingdom stands in manufacture, there is no leading branch in which her pre-eminence is so evident as in the cotton industry. To the people of the country cotton is by far the most important of the textile industries, while the Kingdom as an exporting nation sends her finished and half-manufactured products to all parts of the world. Raw cotton comes into the country from the great producing countries. It is manufactured in South-West Lancashire, etc., and then, while some is retained for home use, the rest is exported, to the value of £70,000,000. Some half-million operatives are employed in the manufacture.

*The United States.*—The cotton industry of the United States has been increasing with great rapidity during the past twenty years, and the country now provides a very large portion of the fabrics required for home use. As yet, however, the imports of foreign cotton goods still outbalance her exports. The chief centres of the manufacture are Lowell, Baltimore, Patterson, and Philadelphia. Over 200,000 workpeople are employed directly in this industry.

*Germany.*—From Germany there are every year increasing amounts of cotton manufacture sent abroad. Yarn,

however, she still imports. The industry has found its chief development in Alsace, in the kingdom of Saxony, and in Baden and Würtemberg.

*France.*—This country, like Germany, is able to export some part of her manufactures. For a few years she was detrimentally affected by the loss of Alsace-Lorraine, being obliged to import yarn in very large quantities. But of more recent years it has been recovering ground, and has proved itself very apt in the production of one class of goods.

*Russia.*—In this country the industry is in by no means so developed a condition. The imports of yarn are considerable, and though the exports of fabrics have usually of recent years exceeded the imports, the excess is very small.

Both on the Continent and in the United States the rate of increase in manufacture of cotton has been greater, in both Germany and the United States very much greater, than in the United Kingdom. The increased production on the Continent, however, has not deprived England of much of the trade it did with them. It has deprived it of a large portion of the trade it might have done with them, if they had not so improved. In the case of the United States the great advance of manufacture has deprived the United Kingdom of a most valuable customer. The imports of English goods into that country are smaller than they were. In all probability they will decrease still more. From neither of these quarters has the United Kingdom met with nearly so serious a rivalry in backward markets as, so far as China, Japan, and other eastern markets are concerned, it has encountered from India. Indian yarn and goods, especially the latter, are exported thither in increasing quantities. In *British India* the extension of the manufacture of cotton dates from after the American Civil War. When peace was restored the raw cotton produced in the new plantations in India was no longer in so high a demand in England, and its presence in India as a ready supply led to the real foundation of the manufacturing industry, which has developed with remarkable rapidity. India still continues to import finished goods, but there are signs that this trade is beginning to decrease, while its export of yarns is

far greater than the import. The chief development of manufacture has taken place in the island of Bombay, in the cotton-growing districts of Gujerat, and in the neighbourhood of Calcutta. The advantages possessed by British India in the manufacture for its own needs and those of neighbouring countries are very manifest.

## 2. Wool.

The history of the production and use of wool in manufacture records some striking changes. The keeping of sheep for the sake of their wool, at one time a very important branch of the European agricultural industry, has given place to their breeding for their flesh, while even that is menaced by the increasing imports of American and Australian meats. In most European countries the flocks during recent years have either remained stationary or decreased in number. Since 1884 the production of wool has diminished so far as the more important countries are concerned, with the exception of England, where in 1890[1] it had increased about 2 million lbs., and France, where the yield of the same year exceeded that of 1882 by 51 million lbs. In Italy there was a slight increase of between 4 and 5 million lbs.

On the other hand the growth of the woollen industries has been great.

Europe has been learning to import her wool from countries where it can be produced at a much lower cost, and these countries have been learning to prepare, clean, and send their wool to European markets. Wool of course can be produced in nearly every country, but it cannot be produced everywhere at the same price. The chief countries producing wool for Europe are Australia, the Argentine Republic, Uruguay, Cape Colony. The United States produces a large amount of wool, but so great are its requirements that it has to import more.

The total annual production of wool in the world about

[1] In 1892 there were in the United Kingdom 2 million more sheep than in 1890.

the present time is about 2100 million lbs., of which Europe produces 800 million and the principal countries outside Europe 1300 million lbs. The leading *industrial* countries produce—

| | Million lbs. |
|---|---|
| United Kingdom . . . | about 140 |
| France . . . . . | ,, 130 |
| Germany . . . . . | ,, 56 |
| United States . . . . | ,, 275 |
| Russia . . . . . | ,, 260 |

Very few important features of interest are presented by the circumstances of this home supply. Far otherwise is it when we turn to the great producing and *exporting* countries. Their exports to Europe and North America in 1890 were—

| 1889. | Million lbs. |
|---|---|
| Australasia . . . . . | 520 |
| Argentine . . . . . | 260 |
| Uruguay . . . . . | 48 |
| Cape Colony . . . . . | 64 |
| Natal . . . . . | 26 |

There are thus three quarters from which the foreign wool supply chiefly comes, viz. Australasia, La Plata, South Africa.

*Australasia.*—This is by far the greatest wool-producing quarter. Though at times the River Plate countries have had nearly the same number of sheep, their yield of wool has been invariably very far below the yield in Australia. Sheep farming is a prominent occupation in all these colonies, but the chief place in the production of wool has been taken by New South Wales, New Zealand, and Victoria. Of these New South Wales is by far the most important, possessing as it does unrivalled stretches of land fit for pasture, and admirable arrangements for facilitating export to the United Kingdom. Nearly all the wool is sent to England, but not all for the use of that country. England serves as a distributing centre for the wool she receives, exporting over 300 million lbs. of foreign and colonial

wools—principally to France, Germany, the United States, Belgium, and Holland.

*The River Plate.*—The capacity of these countries for the keeping of sheep and production of wool has been greatly increased since the extension of the pastoral colonies in the Argentine. The most important wool provinces in this country are Buenos Ayres (much the most important), Entre Rios, Santa Fé, Cordoba. The wool from the River Plate takes an entirely different course when shipped than does that from Australia. Very little of it, only some 3 per cent, goes to the United Kingdom. The chief places of destination are the continental ports, Havre, Dunkirk, Antwerp.

*South Africa.*—In the west of the Cape Colony there are many districts suitable for sheep, but the greatest number are pastured in the wide lands known as the Karoo. The wool from the Cape has been growing in importance as an export for some time, and promises to hold a prominent place in future supplies. Most of it is sent to the United Kingdom.

In the forefront of the nations engaged in the industrial treatment of wool stand the United Kingdom, France, the United States, and Germany. *In the United Kingdom* the industry is one of very old standing. Since the middle of last century the chief county over which it is spread has been Yorkshire. Owing in part, no doubt, to the severe competition which its goods meet with from the productions of Germany in particular, and in part to their partial exclusion from many other countries owing to heavy custom duties, the exports from the United Kingdom have been almost stationary during the last few years. In value they still amount to about £22,000,000. It has been reckoned that the number of operatives employed in the various branches is 300,000. In *France* the wool industry has spread through the north of the country, centring round Roubaix. But so far as recent years are concerned, neither industrial activity nor export has increased. The case is not the same with *Germany.* From that country the exports, though irregular, show a distinct increase. In the

*United States* the increase in manufacture has been very great, but so rapid has been the rise in demand and the increase in population, that it has not been able to do more than keep pace with these. Imports of woollen goods into the United States are still very large, amounting in value to over £7,000,000 in 1893.

### 3. Flax, Hemp, and Jute.

These three textiles are important to the industries of several nations.

*Flax.*—Flax has a very wide geographical range, and is capable of cultivation in almost any country. At one time it was cultivated to a considerable extent in England, but now, so far as the United Kingdom is concerned, the growth of flax and the manufacture of linen are chiefly confined to Ireland. The only European countries which grow flax in excess of the requirements of home manufacture are *Russia, Belgium, and Holland.* Russia occupies the foremost place as an exporting country, sending large quantities yearly to the United Kingdom. *Linen* is manufactured in most European countries, in most instances not acquiring much importance as a commercial product. It still remains an industry carried on in the homes of the people in Austria-Hungary, parts of Germany, Holland, and Belgium. In some parts of Austria, however, in the neighbourhood of Rumburg especially, it is carried on in factories. In France the linen industry is a very important one, being carried on chiefly in the northern districts, and producing a very high class of goods. In the north of Ireland, near Belfast, linen is produced in very large quantities and in almost every quality.

*Hemp.*—Like flax, hemp can be grown in most countries. The two countries which produce it in the largest quantities are *Russia and Italy*, both of which export it: Russia to the extent of 145 million lbs., and Italy to that of nearly 90 million lbs. It is used for sail-cloth, sacking, and every variety of cordage. Other countries where the production is large are Hungary, France, Austria, Germany, the

United States, Egypt, Australasia. *Manilla hemp*, a much finer product, must not be confused with the above; it is produced, as its name indicates, in the Philippine Islands, and exported thence to Europe. It is used for the manufacture of very fine rope, and for light fabrics or curtains, etc.

*Jute.*—The use of jute has been well known in India for a long time. From it are made coarse bags and sacking, which are wanted for cheapness and not for durability. Since its manufacture has spread to other countries, it has been cultivated in India (chiefly in Northern and Eastern Bengal) for the purpose of export as well as for home use. In the jute industry the United Kingdom stands foremost, the chief places of manufacture being at or in the neighbourhood of the ports where it is received from India, as Dundee, Glasgow, Belfast, and London. The jute industry is also carried on in the United States, Germany, France, and Austria.

## 4. Silk.

The production of silk takes place in the area suitable for the cultivation of the mulberry. Raw silk is consequently produced in many places, but chiefly in two quarters of the world, that is in China and Japan, and in Italy and South France. The total silk yield for the year 1890 was some 55 million lbs., of which Europe altogether did not produce fully a fifth.

| | Million lbs. |
|---|---|
| China | 24 |
| Japan | 13 |
| India | 3 |
| Italy | 7 |
| France | 1 |

Other countries engaged in production are: in Europe, Austria, Spain, Portugal, Turkey, Switzerland; out of Europe, Asiatic Russia, Syria, Asia Minor, Persia, Siam. In China the chief district for the production of silk is the northern portion of the province of Che-chiang. In the

interior the towns which serve as markets are Hutschan, Kiahing and Nantsin, whence that part of the produce intended for foreign export is sent to Shanghai. Canton is another important silk port. In Italy the leading districts of production are Lombardy, Venice, and Piedmont.

Of the produce of the East a large amount is sent to Europe for use in its industries. The countries engaged in these are France, which stands by itself in the first rank, and then Germany, Italy, England, Switzerland. The manufactures of *France* occupy the first place in Europe. To the country itself they are of very great importance, and are plied with the greatest diligence in Lyons and St. Etienne, Marseilles being the great port of import for the raw silk from the far East. In *Germany* a large trade is done in the manufacture of silk goods and ribands, chiefly in Rhenish Westphalia, as at Barmen, Krefeld, and in Alsace-Lorraine. The silk industries of the *United Kingdom* are not progressing favourably. If anything they show a tendency to decline. Their most hopeful branch is the production of mixed silk and woollen goods, and till recently of plush. *Italy* maintains a large population in the neighbourhood of Milan by silk industries, and the velvets of Genoa are second only to those of Lyons. The value of the silk goods imported into the *United States* during the decade 1880-90 was double that of the fabrics produced at home. The import of raw silk for use in its factories shows a continual increase.

### 5. Other Textiles.

In addition to wool the **hair** of other animals is largely employed for the production of cloths and fabrics of various kinds. Among the more important are *mohair*, the hair of the Angora goat, which is of great value. Till recent years the import into the United Kingdom and other manufacturing countries came almost exclusively from Asia Minor through the port of Smyrna. The Angora goat has, however, been acclimatised in other countries, with the result that there is now a considerable yield of mohair

at the Cape, and in some of the states of the United States, as Georgia. The *hair of the Cashmir goat* is procured from Cashmir, Tibet, and the Himalayas. It is largely used in the manufacture of the so-called Cashmir and Indian shawls. The *alpaca* llama, which yields a product extremely useful to British and other textile industries, is a native of the Andes. Alpaca wool is largely exported to Europe from Peru. *Vicuna* wool, the yield of another species of llama, is brought from the same districts, but in much smaller quantities. It is very fine in quality. *Camel's hair*, now largely used in the United Kingdom and the United States for the manufacture of cloth, shawls, coverings, etc., is exported chiefly from China.

*Coir fibre*, which is spun into yarn and then made into mats, carpet coverings, ropes, etc., owes its position largely to its great strength and power of resisting water. It comes from the outer husk of the cocoa-nut. It is usually spun into yarn in the places of its growth, and thence exported to Europe. The chief places producing it are India and China. *Hennequin*, a product of Yucatan in Mexico, and of British Honduras, is a fibre considerably stronger than jute, and useful for manufactures of the same kind. *China grass*, a fine fabric, is manufactured under this name from a species of nettle which is chiefly cultivated in China and Japan. *New Zealand flax*, the name given to the fibre of a plant indigenous to New Zealand, which is grown in Australia, but capable of cultivation in other countries and climates. It is extremely strong, and would be very valuable in the manufacture of cordage were it not for its brittle nature.

## CHAPTER III

### OTHER PRODUCTS (CHIEFLY MINERAL) AND THEIR MANUFACTURE

### 1. Coal.

SOME reference has already been made to the importance of coal to all countries engaged in manufacture (pp. 20, 21). *Coal* is of many varieties. True coal is of two principal kinds, bituminous and anthracite. Of these the *bituminous* is by far the more important. It contains a proportion of carbon varying from 85 to 88 per cent, but combines with these a considerable amount of gas, tar, and like substances, burning with a bright flame and lighting with ease. It is thus particularly suitable for gas-making, general industrial purposes, and domestic consumption. *Anthracite* contains more carbon, but less proportion of gaseous and tar products. Though difficult to light, it burns with intense heat when once kindled. The former difficulty was at one time an almost complete obstacle to its use, but now, by means of the hot-air blast, it is utilised in several directions, particularly in iron-smelting and production. *Lignite*, or brown coal, contains more moisture, is not so hard in character, and possesses only some 70 per cent of carbon. It is of very much less use in industry than are the other kinds.

*Coal is used for many purposes.* It is directly or indirectly one of the means of heating and lighting, thus

entering largely into domestic use. It is employed for purposes of locomotion both by sea and by land. And it is used in the industries of all the advanced countries.

Its total production has rapidly increased, not only during the present century, but even during the thirty years extending from 1860 to 1890. In 1860 the total production of the world was estimated at 133 million tons, an amount far exceeded thirty years later by the respective productions of two countries. In 1880 it amounted to 339 million tons, while in 1890 it reached 506 million tons. In all countries of any importance there has been during this period an increase in the amount of coal produced.

The following is a table of the coal production of the chief countries during the year 1890 (in round numbers) :—

| Countries. | Million Tons. |
|---|---|
| United Kingdom | 182 |
| Germany | 88 |
| Austria-Hungary | 27 |
| France | 26 |
| Belgium | 20 |
| Other European countries | 7 |
| Europe | 350 |
| United States | 141 |
| Other countries outside Europe | 15 |
| Outside Europe | 156 |
| Total of World | 506 |

Since 1890 the coal output of the leading nations has increased, and there is little doubt that some progress has taken place in even the minor industrial countries. With the exception of the six countries mentioned by name, the production is, as we see, very small. Russia, New South Wales, China, Canada, Japan, British India, and Spain each produce more than one million tons annually.

The six leading countries in the production of coal are

the six great industrial states of the world. How great their progress has been may be judged from, firstly, the vast increase in their coal production and consumption, both before and since 1890; and secondly, the contemporary progress in its economical use. This latter has taken place more especially in the iron industry.

In addition to the steam power derived from coal, certain countries have been able to avail themselves of other forces, as *water power*, and in the case of the United States, *natural gas*, which issues from the ground in abundant quantities in the neighbourhood of Pittsburg. The natural gas used in the United States has been reckoned equivalent to the consumption of 14 million tons of coal. Other forces, as electricity and tidal power, will no doubt be utilised in time.

*A more detailed list of the chief localities of coal production :—*

UNITED KINGDOM.

| | Million Tons. |
|---|---|
| Durham | 28 |
| South Wales and Monmouth | 26 |
| Lancashire | 20 |
| Yorkshire | 20 |
| East Scotland | 15 |
| Staffordshire | 13 |
| West Scotland (Lanark and Ayr) | 6 |

UNITED STATES OF AMERICA.

A very large portion of the total output is as yet raised in Pennsylvania.

| | | |
|---|---|---|
| Pennsylvania, | 1892 | 88 |
| Illinois | ,, | 16 |
| Ohio | ,, | 12 |

GERMANY.

| | Million Tons. |
|---|---|
| Westphalia, Ruhr valley, Saar valley, Silesia (nr. Tarnovitz) | 55 |
| Saxony | 4 |

FRANCE.

| | |
|---|---|
| Nord by Lille | 8 |
| Loire (St. Etienne) | 4 |
| Creuzot | 1 |

AUSTRIA.

| | |
|---|---|
| Erzgebirge (lignite) | 5 |
| Silesia | 1 |
| Bohemia, nr. Pilsen | ¾ |

BELGIUM.

| | |
|---|---|
| Namur, Liège | 20 |

In the United Kingdom and most of those enumerated, the production of coal may be taken as fairly representing the capacities of the country with regard to it. Coal is so precious and the countries so fully developed that large fields of coal are not allowed to lie idly or but partly worked. This is not the case in America, whereby the richest coal deposits are hardly touched upon. The Mississippi basin, which is comparatively little developed, is one long bed of coal. The question as to the future of the coal supply, not of England alone, but of the world, is often discussed. Before the coal-fields of our own country are in any way exhausted, some hundreds of years

must elapse, and several of the European countries are in no worse plight than ourselves. There are, however, certain countries which possess large stores of riches in the form of this mineral as yet hardly touched upon. They possess much, work little, and use hardly any coal. In the future it is possible that they will become large coal-exporting countries.

In the case of some countries, and particularly of England, there is a considerable difference between the coal produced and the coal consumed in the country.

The various uses to which the coal of the United Kingdom is put in its consumption may be stated as follows:—there is used in iron manufacture 17 per cent, in general manufactures 23 per cent, in railway locomotion nearly 4 per cent, in the manufacture of gas nearly 5 per cent, the rest being used for miscellaneous and household purposes, and for export.

## 2. Iron.

After coal there is no mineral nearly so important to the general well-being of the country as iron. This metal, by its supply of the material used in building ships and constructing the railways, forms the basis, as it were, of the system of locomotion and transport both external and internal. In the second place, from it is made the machinery employed in the numerous and important manufactures of the United Kingdom and other countries; while, lastly, a number of iron and steel articles are used in the construction of houses and for the purposes of everyday domestic life. To some extent the condition of the iron industries of a country is an index of the position it holds as an industrially advanced country.

The total annual production of the world (average of years 1886-90) of pig-iron is about 23 million tons, and the countries engaged in the production may be grouped in three classes—those which produced a great deal, viz.:—

| | Million tons. |
|---|---|
| United Kingdom | nearly 7¾ |
| United States | 7 |
| Germany | 4 |

those which produce moderately :—

| | |
|---|---|
| France | 1½ |
| Austria-Hungary | over ¾ |
| Belgium | ¾ |
| Russia | ⅗ |
| Sweden | nearly ½ |
| Spain | ¼ |

and, lastly, countries producing little or none.

Spain, it should be noticed, exports a good deal of unworked iron ore to other countries, chiefly to England (South Wales). The country which has made by far the most progress in the production of pig-iron is the United States, where the rapidity with which industry is advancing and the extension of the railway system increase the demand for this metal. But though they will soon outstrip the United Kingdom in production, the latter will hold the first place in the consumption of iron per head of the population for some time. The average yearly consumption of pig-iron during period 1885-89 distributed per head of the population was: in the United Kingdom, 402 lbs.; in Belgium, 339 lbs.; and in the United States only 238 lbs.

The great importance of the ship-building and railway industries is best seen in the cases of the United Kingdom and the United States, the former country engaged in constructing steel ships to an unrivalled extent, and producing steel rails, etc., both for its own use and for the countries of South and Central America and the British Colonies, the latter extending its railway system with great rapidity.

In the *United Kingdom* iron-smelting is principally carried on near Middlesborough in the Cleveland district, in South Wales near and round Merthyr Tydfil, at Barrow, and in Staffordshire, and in West Scotland in the rich

coal-fields in Lanark and Ayr. In the *United States* Pennsylvania is the great home of the iron-smelting industry. Pittsburg is the great iron town. In *Germany* iron-smelting is carried on most importantly in the Ruhr valley.

One great disadvantage from which many countries have suffered has been the distance of the iron-fields from the coal mines. Both the United Kingdom and the United States are very favourably situated in this respect. Other countries, through their low state of industrial development, are driven to rely for their iron goods, and especially for the railway plant, on the supplies to be obtained from the more forward lands.

The chief exporting country is the *United Kingdom.* Its exports have varied considerably during the last few years owing to the renewed efforts of the United States to close its markets to our goods. In 1890 the value of these iron exports was £31,000,000; of these, the great mass goes to the British Colonies, India, Canada, and Australia. In the case of railway plant and steel rails, the Argentine and Brazil are very large purchasers from England. Owing to its large foreign trade in iron and steel goods, there is a large import of iron ore, of which nearly all comes from Spain. It enters at the south Welsh ports and at Newcastle and Glasgow, and is smelted with the coal from the neighbouring pits. *Germany* exports an increasing amount of iron and steel goods, and imports more pig-iron than it exports. *France* imports iron ore, and is able to send abroad its surplus products both in manufacture and pig-iron. The *United States*, despite its efforts to render itself independent of foreign supplies, and notwithstanding the extent of its iron production and manufacture, still continues to buy pig-iron and European iron and steel goods. This is owing to the rapid growth of its industries, and the necessity in which it stands of still further railway extension. *Belgium* imports regularly more iron ore and pig-iron than it exports. On the other hand, its exports of iron goods are very considerable, falling not far short of half a million tons in quantity. As a

nation exporting iron and steel goods, Belgium ranks next after the United Kingdom and Germany.

### 3. Other Metals used in Manufacture.

**Copper.**—The uses to which copper is put are various. In consequence of its freedom from rust, it is used for domestic utensils and for the sheathing of ships; and in consequence of its durability it is used in the composition of brass and gun-metal, etc. Copper ore exists in a great many countries, but the chief supplies are furnished by four—the United States, Spain, Chili, Germany. In 1887 the total production of copper was about 224 thousand tons, of which the United States produced 78 thousand, Spain about 49 thousand, Chili 29 thousand, and Germany 15 thousand; while other countries contributing noticeably to the supply were, Japan, Australia, Cape of Good Hope, Russia, Venezuela, Italy. These quantities refer to the amount of copper produced from the ore and not to the weight of the copper ore itself.

In the *United States* copper ore is mined most plentifully in Montana, round Lake Superior, and, thirdly, in Arizona. The increase in the copper production of the United States has been very great during recent years, for in 1880 it was about one-third of the yield in 1887.

In *Spain* by far the most profitable mines are those at Rio Tinto, next to which come those of Murcia.

Until 1883 *Chili* was the first copper-producing country, but in that year it was outstripped by the United States, while, owing to the progress made in Spain and to a slight diminution in its own production, it has now fallen behind that country. In Chili the leading copper districts are Coquimbo, Aconcagua, Santiago, Arauco, Chiloe, and Atacama.

Though the United Kingdom mines but little copper itself, it is the most important country in the trade and manufacture of copper. To it is sent annually, after a slight preliminary treatment, copper from Spain, the Cape of Good Hope, Chili, Venezuela, and even from the

United States. These coppers are imported at the Welsh ports, Liverpool and Newcastle, and treated chiefly at Swansea.

**Lead.**—Lead was known to the ancient world, being largely used then, as now, for water-piping. Owing to the great extension of gas and water connections and of other kinds of piping, its use during recent years has increased very rapidly. Chemical progress has provided the means for its extraction, which was formerly an obstacle, since its intimate intermixture with other metals, and especially with silver, rendered this a process of considerable difficulty. Silver had to be eliminated because of its higher commercial value, other metals because of their inferiority. In addition to its use by itself, lead is an ingredient in the composition termed pewter, which consists of some five parts tin to one of lead.

Though *the United Kingdom* is the most important country engaged in the trade and final production of lead, it is by no means the leading country in its production. It now stands about fourth on the list. Its own production takes place chiefly in South Wales (Cardigan and Montgomery) and the counties of Northumberland, Durham, and Cumberland.

*The United States* takes the lead in the production of lead. In 1889 the yield was 190,000 tons, showing a very large increase on its earlier production. The most important states were Colorado, responsible for over one-third of the entire yield, Utah, Idaho, Montana, and in the second rank Missouri, Kansas, Illinois, and Wisconsin. *Spain* produces lead in large quantities in the provinces of Mercia, Almeria, and Jaen. A large portion of its lead is exported in ore to France, Belgium, Germany, and England for smelting, though of recent years there has been a considerable extension of lead works in the country. In *Germany* the production of lead takes place most importantly in the Rhine provinces, after which stand Hanover, Hesse, and Silesia. Other countries of importance are France, Italy, Belgium, Austria-Hungary, Mexico, Algiers, Chili, and New South Wales.

**Tin.**—The United Kingdom, famed of old for its production of tin, is still the most important, indeed the only important country in Europe for its production. It is also the leading country engaged in the trade and manufacture of this metal. The introduction and rapid increase in the use of tin-plates has made the tin industry one of great and increasing importance, and has been a large source of wealth to England.

The production of tin in the United Kingdom takes place in the mines of Cornwall, and to some extent in the neighbouring parts of Devonshire. There are now important sources of tin supply outside Europe. Tin is produced in very large and increasing quantities in the *Straits Settlements* and their immediate neighbourhood. The ore is collected at Singapore and thence shipped chiefly in ingots and blocks to the United Kingdom. The United Kingdom also derives an important supply from its Australian possessions, mainly from *New South Wales*, though also from *Queensland* and *Tasmania*. A large production of tin takes place in the Dutch East India Islands, Banka and Billiton, whence the product is sent to Rotterdam. Other countries contributing appreciably to the world's supply of tin are Bolivia, Peru, the United States.

**Zinc.**—The uses of this metal are very various. It is used in the composition of brass. It serves as a substitute for lead in several cases, and is used in many important branches of industry, as the manufacture of electrical apparatus and printing. *Germany* is the most important country so far as its production is concerned, and from it large quantities are exported. In Germany it is found most richly in the Rhenish provinces, Westphalia, and Silesia. After Germany *Belgium* and the *United States* are great producers, in the latter the states of New Jersey, Missouri, Pennsylvania, Kansas, and Wisconsin being pre-eminent. The zinc industry of the *United Kingdom* is so extended that ore has to be imported from other countries, and especially from *Italy* and *Greece*, the home production providing only one-half of the ore required. In addition to

the two countries last mentioned, the following produce zinc—Austria (Carinthia), Sweden, and Spain.

Among other metals of considerable importance in manufacture are *quicksilver*, which is chiefly supplied by three countries. California has risen into the first position in production, though it contributes comparatively little to the European countries, which draw their chief supplies from Spain (provinces of Mancha at the mines of Almaden), which sometimes produces nearly as much as California, and from Austria (Idria). Italy also has quicksilver mines. The quicksilver of Peru and Mexico only suffices for home use in the extraction of silver. *Manganese*, needed in the manufacture of steel, is produced largely in the Harz Mountains, parts of Russia, France, the United States, the United Kingdom. *Nickel*, used for several purposes in the arts and industries, is procured largely from Italy, Norway, Germany, and Austria-Hungary, while of late years the production of the French colony of New Caledonia has risen to be of great importance in the market. *Platinum* is a very rare metal. Its chief place of production is the Ural Mountain district of Russia. *Bismuth* is produced mainly in the Erzgebirge (Germany), also in France and Sweden. *Antimony*, an element in several alloys, is produced in Australia, in both Austria and Hungary, in Italy, and in France. *Aluminium*, which is prepared with considerable trouble, is produced chiefly in two countries, the United States and France. *Arsenic* is employed in the arts and manufactures, as well as for medicinal purposes; is largely manufactured in the United Kingdom, and also in Germany.

### 4. Leather, Hides and Tanning: Furs.

The manufacture of leather is both an ancient and an important industry. In the form of hides it served as one of the first materials of clothing, and though great advances have been made of recent years, and in the more developed countries, in its preparations, many of the nations of antiquity made use of a leather of high quality. With regard

to its importance it is sufficient to repeat the statement so often made, that in the number of people employed in the United Kingdom in its various branches it ranks next after the cotton, woollen, and iron manufactures. Leather is used for a great variety of purposes—boots and shoes, gloves, saddlery, bookbinding, furniture coverings, boxes and bags, articles of ornament.

The raw materials required in the manufacture of leather may be divided into hides and tanning stuffs.

*Hides* are of many kinds, being the products of many animals. By far the greater proportion are furnished by the more common animals, as horses, cattle, sheep, goats, pigs, most if not all of which are kept and bred for the sake of other products besides their skins. Though all countries have a considerable home supply of hides, there are some which require much more than can be furnished them from this source, and others which slaughter so many beasts that they can export hides in large amounts, often indeed only sending abroad their hides to be returned to them in the form of manufactures. Of these latter countries the most important are British India, Australia, United States, South American countries. From British India the exports proceed chiefly from the Presidency of Bengal, and are very large, a great portion going to the United Kingdom. Of the Australian colonies the most important is Victoria, which is followed at some distance by New South Wales and New Zealand. Most of the Australian hides exported are already tanned. The same is the case with the hides exported from the United States; but this country, while exporting hides of certain kinds, imports a great quantity of leather, exceeding in value its exports. From the Argentine Republic and Uruguay there are large quantities of hides sent to the countries of Europe, the supply from this quarter of the world being further swelled by the products of South Brazil (Rio Grande do Sul) and Paraguay.

The chief stuffs used in tanning the hides are the barks of trees, which contain tannin, an astringent. In the process the skins, scraped and cleansed, are placed in the tan-pit in alternate layers with some of these substances, after

which the pit is filled with water. As the time required is long, varying from two or three months upward, fresh supplies of water and tanning material are necessary. The United Kingdom derives a large supply of foreign tanning substances from British India, Turkey, Greece, Italy, and the Straits Settlements.

In the principal industrial countries the manufacture of leather and its accessory industries hold a very important position. France has an unrivalled supremacy in the manufacture of glove leather and of gloves, the best leather for this purpose being worked up at Annonay, Chambery, and Paris. In this last city there takes place a large production of fancy leather goods. In Germany fancy, patent, and coloured leathers are produced in great quantities, the chief district being Bavaria, and the leading town Munich. Despite its own large leather industries the United Kingdom has, in consequence of its increasing demand and consumption, to import leather and leather goods from all quarters, mainly from France, from and through Holland and Belgium, and, in the case of leather both dressed and undressed, from the United States. Within the country the boot and shoe trade centres round Northampton and Bristol, this latter town being the most important town for tanning and currying, otherwise scattered throughout the whole country. English saddlery and harness are very highly valued.

*Furs.*—Putting aside rabbit skins, which are exported from several countries, but chiefly from the Australian colonies, *furs* come mainly from two parts of the world: from North America, British North America, and the United States, and from Russia, from which countries there are very large exports every year.

### 5. Miscellaneous Products and Manufactures.

**Petroleum and other Mineral Oils.**—Among the most important of the means for lighting is *petroleum.* Together with coal-gas and tallow it furnishes artificial light, while coal, timber, and petroleum provide means of heating and cooking. Petroleum is mainly found in two localities: in

the United States in Pennsylvania, and in the Caucasus districts of Russia. From these countries the supply is distributed over the world. In the United States the chief oil district lies in the north-west of Pennsylvania, where boring for oil has been carried out to a remarkable extent. From the wells the oil is conveyed in pipes to the places where it is refined, and thence by the same means to the oil markets. There is a further production in California. In Russia there are two districts rich in mineral oils, the richer of which, Balakhany-Sabonutchi field, is in the neighbourhood of Baku on the Caspian Sea. The opening of the Transcaucasian Railway in 1883 first gave the opportunity for the cheaper and rapid despatch of the products of this field over the port of Batoum. There is a much less important field near the port of Novorassisk on the Black Sea. At present the supply of oil shipped to other countries from Russia is about one-half of that which is exported from the United States. From the latter country petroleum is chiefly despatched from New York, and to a lesser extent from Philadelphia, Boston, and Baltimore, Germany taking nearly one-fourth of its exports, principally by way of Bremen and Hamburg, after which country rank the United Kingdom, British India, China and Japan, Holland, France, Belgium. Russian petroleum is sent chiefly to the United Kingdom, Austria-Hungary, Turkey, Egypt, British India. In addition to the two great petroleum countries, supplies are produced in Galicia, Italy, Germany, and Roumania, but these do not possess much importance in the markets of the world. *Paraffin* oil is extracted from mineral beds, as coal impregnated with bitumen, in Scotland, in Belgium, France, etc. *Asphalt*, a very important bituminous substance, is found in Switzerland (in the Jura and Val Travers), Italy, Germany, and outside Europe on the shores of the Dead Sea, in the West Indies, and South America.

**Timber and Wood.**—Despite the great substitution of coal for wood as fuel, and the vast use of iron, stone, and brick in construction, the first-named particularly in ship-building, the consumption of timber in Europe is very great. It has

been calculated that the annual value of the wood used, either as fuel or in construction, amounts to £190,000,000. In the United States the wood bill is put at £77,000,000. With the exception of the United Kingdom, France, Spain, and Portugal, most countries produce the chief part, if not the whole of their supply of ordinary timber. To these importing countries large quantities of timber are sent from the forests of Russia, Sweden and Norway, and Austria-Hungary, United States and Canada. The timber trade of the last country is growing rapidly. The ornamental woods come from an entirely different part of the world. *Mahogany* is indigenous to the West Indies and to Central (especially Mexico) and South America, wood of the best quality being furnished from Hayti and Honduras. *Teak* is exported chiefly from British India and Siam. *Rose-wood* of different kinds comes chiefly from Brazil, but in addition to this country Mexico and Siam contribute to the general supply. In South and Central America there grow many other ornamental woods which enter into commerce in very varying degrees.

**Resins, Gums, etc.:** *Rubber.*—This product, called india-rubber, owing to the early source from which the United Kingdom received its chief supply, has risen into great prominence through its use in the industrial arts, as waterproofing, etc. Its chief place of production is South America (Brazil), and to some extent Central America, where the juice flows freely from incisions in the stem of the rubber-tree, and is caught in vessels affixed below. Assam, however, and Madagascar contribute a supply of rubber of a slightly different kind. *Guttapercha*, also the production of a tree, is produced in the Malay Archipelago, the chief exports going over Singapore. The waterproofing and rubber industries are carried on most importantly in the United States and Great Britain. *Tar*, from the pine or fir-tree, is produced in those countries where this tree grows in vast forests—Russia, Sweden and Norway, and the United States being particularly important. Owing to the large annual yield of these countries, they send tar to countries where the demand is great and a home supply

small or altogether lacking. The United Kingdom imports largely. *Turpentine*, likewise a product from a coniferous tree, is produced in many countries, and chiefly exported by the United States. *Gum* is largely used in industry for stiffening fabrics, for giving consistence to colours, and for other purposes. The two principal kinds are gum-arabic, which is grown in and exported from Arabia and North Africa, and gum-tragacanth, which comes chiefly from Asia Minor over Smyrna. The *lac* used for making sealing-wax is a product of insect life mainly produced in India, the Straits Settlements, and Malay Archipelago.

*Lard* is the melted fat of swine, and is produced in many countries, but exported mainly from the United States.

*Tallow* is animal fat of high value used in the manufacture of candles and soap. Like lard it is produced in many, indeed in most countries. Australia, the United States, and the Argentine Republic do an increasing trade of export.

**Important Animal and Vegetable Oils.**—*Animal oils* of high commercial value are chiefly obtained from the Arctic whalers and sealers. Whale oil (spermaceti) is used for several purposes, and chiefly for the manufacture of candles. The United States and United Kingdom are the countries chiefly engaged in whaling. Cod-liver oil used medicinally is refined and exported from Newfoundland and Norway. *Vegetable oils*, with some exceptions, are chiefly used for lubricating machinery, dressing leather, and in the manufacture of soap. The best *olive oil*, which is used for table purposes as salad oil, is produced in the south of France and North Italy. Linseed, rape seed, cotton seed, and sesame, all of which are plentifully supplied from India, furnish a large portion of the vegetable oils. After the oil has been crushed out, oil-cake used for feeding cattle is made of the remnant. *Castor oil* is exported from India and France. *Palm oil* is made from the kernels of the palm. The extraction is carried on very largely in Germany, Holland, and the United Kingdom, to which countries the raw material is imported mainly from West Africa.

**Chemical Industries**, in many of which there is a large use of salt, are highly developed in the leading industrial countries, and chiefly in England, Germany, the United States, and France. Their situation is largely determined by proximity to coal and to the places or ports where the other substances, as *e.g.* salt, needed in their processes are made or imported. In their turn they provide substances largely used in the production of other articles, as soda and potash in the manufacture of soap and glass, bleaching powder in that of paper. In the United Kingdom there are large chemical industries in the neighbourhood of Liverpool, Glasgow, and Newcastle. In Germany the chief chemical districts are in Rhenish Prussia and Baden. In France the main centres of these industries are Lyons, Paris, Chauny, and Lille.

In the manufacture of *soap* several ingredients are required. On the one hand some oils or fats, on the other certain chemical products, soda or potash. In certain cases soap-works lie in the neighbourhood where chemicals are produced, and in most instances near large industrial centres.

*Paper* is made from many substances. Till recently the chief material used in the modern production of paper was rags. Now, however, *esparto* grass, mainly produced in Spain, Algiers, Tripolis, etc., is employed for this purpose in increasing quantities, while wood pulp, straw, etc., are also used. The rags mostly used are woollen and cotton, linen rags forming a much less important material. Paper made from rags comprises nearly three-fifths of the entire production. The countries using a high individual quantity of paper are the United States, the United Kingdom, Germany, and France, while the only countries which export paper to a considerable extent are Germany and France.

**Stone and Clay and their Uses.**—Fortunately for the well-being of civilised nations which depend so largely upon the foregoing materials for the building of their houses and the construction of works of utility and ornament, no country of any importance is without a supply of some one or other kind. The number of bricks made from clay and turned

out yearly from the brick-fields is enormous. Dr. Scherzer has reckoned the annual value of the stone and clay (largely bricks) used in building in Germany, United Kingdom, United States, and Austria, as reaching £100,000,000. In all these countries a great many thousands of labourers are busied in the quarries and brick-fields, besides those employed in the more immediate construction of houses, etc. In the less common kinds of stone considerable trade takes place. *Marble* is exported from Italy, importantly from Carrara, and from the Pharos. *Millstones* are supplied by Germany, Austria, and France. *Slate* is quarried in many countries, noticeably in Wales, Germany, France, and Belgium. *Cement* is largely manufactured in the United Kingdom, Germany, and France.

In the manufacture of *earthenware and porcelain* many kinds of clay are used. Of the fine kinds kaolin is found in Cornwall and Devon in the United Kingdom. Fine porcelain clay is found in the Limousin in France and in Saxony, both these countries excelling in the production of highly valued porcelain. The leading countries exporting earthenware and porcelain goods are, in their order, the United Kingdom, Germany, and France, the exports from other European countries being relatively unimportant. Both China and Japan send porcelain (china) to Europe.

*Glass* requires in its manufacture earths containing silica and a chemical agent. In the production of cheap ordinary glass Belgium and Bohemia lead the way, both sending large exports to the United Kingdom. In France the glass manufacture holds a very high position, centring in Paris and the northern departments. Venetian glass from Italy is unrivalled in beauty. In the United Kingdom the prominent glass industries are in the neighbourhood of Birmingham and Liverpool: in Germany, in Silesia, Westphalia, and Rhineland.

**Other Products.**—*Cork*, the bark of the cork oak, has attained its importance owing to its lightness and its power of resisting water and damp. The cork oak flourishes in the south of Europe, the chief countries taking part in the general supply of cork being Spain and Portugal, Southern

France, Algiers, and Italy. Since the employment of machinery in cutting and preparing cork, a cork industry has sprung up in Germany, the United Kingdom, and France.

*Dye-Stuffs.*—These are of many kinds, some vegetable, some animal, some mineral. *Indigo*, a most valuable blue dye, is extracted from the different species of a small shrub. Its chief place of production is British India, but its cultivation is carried on also in Java, the Philippine Islands, West Indies, and Honduras. *Logwood* comes mainly from the West Indies and British Honduras. *Madder*, from the root of which a red dye is extracted, is cultivated on this account in the Netherlands, France, Asia Minor, Greece, and Turkey. *Woad* (blue) is indigenous to the north-western countries of Europe, its chief cultivation taking place in Germany. *Quercitron*, which yields yellow, is the crushed inner bark of a tree indigenous in parts of the United States (Pennsylvania, Carolinas, and Georgia). *Sumach*, used also in dyeing, comes from Syria and Palestine, and also from Italy, Spain, and Portugal. *Cochineal* is a red colouring dye obtained from insects, and is chiefly imported from the Canary Islands. Of chemical dyes the most important are those produced from coal-tar.

*Feathers* enter into commerce both as ornaments and for domestic use. Among those which serve the former purpose, *ostrich* feathers are by far the most important. These come almost entirely from South Africa, where ostrich-farming is an important pursuit. In much smaller quantities they are exported from Tripoli, Egypt, the Argentine Republic, and Algiers. Ostrich-farming has been introduced into California. A more important use of feathers and down is for stuffing cushions, beds, etc. The feathers used for this purpose are of many kinds, and produced in most countries, supplies being exported from China, Russia, and Austria-Hungary. *Eider-down*, which, owing to its lightness, holds a high position, is chiefly contributed by Iceland, and from other countries in extreme northern latitudes.

*Rushes*, *straw*, *cane*, *osiers*, *and grasses* of different descriptions are used for plaiting for different purposes. So far as the manufacture of baskets and articles for ordinary use are concerned, most countries have some material from their own fields. In Germany and Holland basket-making occupies a large number of people. In these countries and Italy, France, Switzerland, and the United Kingdom, the manufacture of straw hats is important. The grasses of China are particularly suited for the manufacture of the so-called *China matting* which is imported into Europe in increasing quantities. *Panama* straw hats, peculiarly fine in quality, are exported from Ecuador.

*Bees-wax*, used in the manufacture of soap and candles, is produced in most countries and exported by many, noticeably by Germany. The *camphor*-wood tree, from which camphor is extracted, is grown very largely in the island of Formosa, where exports proceed to Europe over Hong-Kong, and also in Japan. *Ivory*, won from the elephant, is an important export from East and West Africa, and also from India. *Amber* is found in rich abundance on the shores of the Baltic. *Whalebone*, one of the several products of the whale fisheries, is prepared very largely in France and Germany.

*Manures*, besides these in ordinary use, consist largely of bones, guano, and mineral substances. The use of crushed bones is great in most countries where high culture leads to a demand for heavy manuring, there being, for instance, an annual import into the United Kingdom. *Guano* is not, like the foregoing, a product of all countries where animals are. It consists of the hardened deposits of birds' dung on the islands and promontories chiefly on the coast of South America, and in the Australian archipelago. Large exports are now sent to Europe from Chili and Peru, and to some extent from South Africa. So hard do these deposits become that they have to be worked as though mineral. The leading chemical manures are phosphates of lime, soda, and potash, etc.

The *horns*, *hoofs*, *and bones* of animals furnish much

useful material for different productions, *bones* being used for making objects similar to those fashioned from ivory. From *bones and hoofs* buttons, knife-handles, etc., are manufactured. *Whalebone* is useful where a combination of strength and elasticity is required.

# PART III

## COUNTRIES: THEIR AGRICULTURE, INDUSTRIES, AND COMMERCE

# THE UNITED KINGDOM

OF the circumstances affecting the industrial and commercial position of countries there are some which bear particular importance in the case of the United Kingdom.

*First of all its condition with regard to the more general physical and political influences requires some attention* (*cf.* pp. 5-17).

Important, i. physical, and ii. political influences likely to affect the trade, industry, and occupations of the United Kingdom.

## i. Physical.

A. With regard to **Natural Formations.** — (1) Its insular position in the sea is important. Not only is sea defence more easy than the maintenance of a long-landed frontier, but proximity to the sea brings it into connection with an untaxed highway to the coasts and ports, and so to the supplies of other countries. Small though the United Kingdom is, it possesses some 1800 miles of coast so indented that it is said that there is no part of Great Britain that is more than 50 miles from the open coast or some inlet.

All along this coast-line, which is particularly uneven and indented on the west, lie many and good seaports, while down to it from the inland portions of the country run many rivers and canals. On the *east* lies the North

Sea or German Ocean, on the *south* the English Channel, while the *north* and *west* are washed by the Atlantic Ocean; in the case of England and Wales, the west by the Irish Sea. For the United Kingdom the sea is no barrier or obstacle, it is rather a means of communication.

(2) Though the mountains are by no means important by reason of height, no division of the United Kingdom is a flat country. In England and Wales the great feature of the mountain systems consists in the Pennine Range, rightly described as the "backbone" of England. It constitutes the central portion of the watershed. Farther north lie the Cheviot and Cumbrian systems; in Wales the Cambrian, and in the south-west the Devonian. In the middle of England is an elevated central plain bordered on the south by the Thames, on the west by the Severn, on the north by the Ouse, and on the east by the Trent. In consequence of this formation the rivers of England may be grouped under three headings. Those falling into the North Sea, which are most of them important, and to some extent navigable; those entering the English Channel, of little importance so far as navigation is concerned; and those flowing into the Irish Sea, these latter being of varying length.

The mountain ranges of England and Wales do not present any great obstacle to easy communication between the main districts, though in another respect they have largely influenced the condition of the country, namely, by the effect which they, in conjunction with the sea and the wind, produce upon climate.

In Scotland the principal mountain systems are the Northern Highlands, the Grampians, and the Southern Highlands. In Ireland the mountains are very scattered, the most important lying in the south-west and in the west. In the centre the country is rather flat.

B. So far as **natural forces and climate** are concerned, the condition of the United Kingdom may be described as generally fortunate. It lies between latitudes 50° and 60° N., thus falling into the zone of temperate climate, which is still further affected by the influence of the sea, which

moderates the rigour of cold and tends to produce greater equality throughout the year.

The westerly winds, which reach the shores after passing over a long expanse of ocean, are an important feature. They raise the temperature of the west above that of the east, while in addition, being met by the high land and mountains running through the centre of the country, they are drained of their moisture. Thus the west is a moister and rainier district than the east. So far as actual temperature is concerned, the climate of the United Kingdom is moderate; it is, however, damp.

How, it may be asked, does this affect the industrial well-being of the Kingdom? On the one hand, the climate is such that labour can be carried on continuously and with regularity, there being few interruptions from excess of heat or cold; it is a good working climate. On the other hand, its dampness and variability are not favourable to the main branch of agriculture, while in addition the former is an important element in certain manufactures. Thus the moist climate is said to be peculiarly advantageous for the cotton industry, that is the case in South-West Lancashire, but unfavourable for that of silk.

C. **Agriculture, etc.**—Only a very small portion of the soil of this country is such that it is *not available* for cultivation. In England the area under crops, grass, or in fallow and available for cultivation is put at three-quarters of the whole; in Wales at over one-half; in Scotland, where the mountains and wide moorlands absorb so much space, at only one-fourth; and in Ireland, despite the large percentage of bog, at nearly three-quarters. Of course, owing to climatic and other causes, much of this is and will remain in fallow.

The chief grain districts lie in the eastern countries and in the south-west of England and Scotland. It is in the former that the chief production of wheat takes place. Wheat is produced to the extent of 60 million bushels; barley to that of 77 million; and oats, chiefly grown in Scotland and Ireland, to that of 168 million. In Ireland potatoes are largely grown as a main food.

*Pasture.*—Of recent years more attention has been paid to pasture than to arable cultivation. There has been an increase in the number of both cattle and sheep. Dairy farming is carried on very largely in Cheshire and Staffordshire, and in the south central counties, as Buckingham, in the south of Ireland, and in Ayrshire. Sheep-farming is carried on in Lincolnshire, in the high central plain, Nottingham, Leicester, Northampton, Rutland, in Yorkshire, and in the south of England.

In 1892 the live stock in the United Kingdom amounted to—

| | |
|---|---|
| Cattle . . . . | 11,500,000 |
| Sheep . . . . | 33,600,000 |
| Pigs . . . . | 3,200,000 |
| Horses . . . . | 2,000,000 |

*Minerals.*—Of the United Kingdom one portion—England, Wales, and the south of Scotland—is very rich in minerals. This is more particularly the case with regard to coal and iron, which by reason of their importance in manufacture will require separate consideration (pp. 114, 115). They are very plentiful. Of the other minerals and metals the chief are: *tin*, found in Devon and Cornwall in very large quantities; *lead*, which is much more scattered throughout the country, chiefly produced in Yorkshire and Northumberland, to some extent in the Peak district, in Wales (Cardigan and Montgomery), and in the Wicklow Mountains in Ireland; *copper* is found, but not in great quantities, in Devon and Cornwall; *slates* are quarried in North Wales, especially round Festiniog; *granite*, chiefly in Devonshire and Cornwall, and in Scotland, in Aberdeenshire. Other building stones are obtained from different parts of the country.

### ii. Political.

*Of the chief political influences* affecting the economic (trading and industrial) development of the kingdom, three are very important:—

(1) The security of life and property in England is better established than in almost any other country. The people are orderly, and the risk of damage or expropriation comparatively slight. Owing to a fairly equitable system of taxation, the pressure of the taxes, which are not light, is comparatively little felt.

(2) England is a free trading country, no custom-house duties being levied on goods entering her ports for the purpose of artificially protecting her home industries. Of course some customs duties there are, but when they exist the corresponding production in England is also taxed by means of what is termed an excise duty, as, for instance, in the case of spirits and wines.

The customs tariff is a very simple one. Duties are imposed on wine, beer, spirits, and certain preparations containing spirit, as chloroform, etc.; southern and preserved fruits; tobacco, cigars, and snuff; tea, coffee, chicory, and cocoa; playing cards. The total value of goods imported and paying duty was, in 1890, a little over £29,000,000.

(3) Greatly to its own disadvantage the United Kingdom has not adopted the metric system of weights and measures, and in consequence imposes upon its traders and the foreigners who trade with it the constant necessity of transposition from one system into another. It also retains a non-decimal system of money.

*Secondly, position of the United Kingdom with regard to the specific conditions favouring the development of A. Agriculture; B. Manufacture; C. Commerce* (*cf.* pp. 18-27).

## A. AGRICULTURE.

The main conditions on which agriculture depends are three (p. 19), a favourable climate, a suitable soil, and an equitable system of land tenure. With regard to the two latter the United Kingdom does not stand at any great disadvantage when compared with the great producing

countries. It has, moreover, a fairly intelligent class of cultivators. But in the matter of climate it is very much handicapped by the uncertainty of the weather and the customary excess of moisture at some season of the year.

For its leading agricultural products and their localities, see pp. 111, 112.

## B. MANUFACTURE.

*a.* In order to excel in general manufacture a country must possess, as the United Kingdom indeed does, a climate which permits of regular exertion during the greater part, if not the whole of the year.

*b.* English workmen are peculiarly fitted to excel in work which requires for its performance a combination of general ability and strength. Though without the artistic taste of some southern races, and less assisted than the Germans, for instance, by a careful system of general and technical education, they probably surpass the workmen of these nations in the labours involved in manufactures.

At the same time the increasing need of technical skill has made it abundantly evident that more attention must be paid to this branch of education, as indeed to all education, if English workmen are to keep the high reputation which their fathers won.

*c. Possession of Coal.*—Though so small a country the United Kingdom is the chief coal producer of the world. Its coal-fields have been mapped out into the following twelve districts, given with their approximate production :—

1. Durham . . . . . 17 million tons
   (Chiefly in South Durham)
   North Yorkshire—3½ *million tons iron ore*
2. Yorkshire . . . . . 23 million tons
   (Chiefly East and West Riding)—*a little iron*
   Lincolnshire—1 *million tons iron ore*
3. South Wales . . . . . 23 million tons
   (Chiefly part of Glamorganshire and Carmarthen)—*a little iron*

4. Midland . . . . . 21 million tons
(Chiefly in Derbyshire and Nottinghamshire)—1 *million tons iron ore*

5. East Scotland . . . . . 15¾ million tons
(Chiefly Lothians and Fife)

6. Newcastle . . . . . 18 million tons
(Chiefly North Durham and Northumberland)
Cumberland—1½ *million tons iron ore*

7. Liverpool . . . . . 14¾ million tons
(Chiefly West Lancashire)
Denbighshire—2 million tons coal

8. Manchester . . . . . 10½ million tons
(North and East Lancashire)

9. South-Western . . . . . 11 million tons
(Chiefly Monmouth)—*a little iron*
Also Somerset, Gloucestershire, and remainder of Glamorgan.

10. South Staffordshire . . . . . 10 million tons
(South Stafford)—*a little iron*

11. West Scotland . . . . . 12 million tons
(Chiefly Lanark and Ayr)—*some iron ore*

12. North Staffordshire . . . . . 6 million tons
(Chiefly North Stafford)—1 *million tons iron ore*
Also Shropshire and Cheshire.

In the above table, in which the chief localities also producing iron ore are denoted by the figures in italics against them, the distribution of the coal supply is shown. Of the coal produced, amounting in 1892 to over 181 million tons, some 30 millions are exported, going chiefly to France (5 million tons), Italy, Germany, Sweden and Norway, and in the second place to Spain, Egypt, Russia, Denmark, each of which takes over 1 million tons, and other countries.

*d. The Proximity of Iron and Coal.*—From the table of coal and iron production given above, it is clear that in England and Scotland these two minerals, which in combination are so necessary to the prosperity of manufactures, are found in comparative nearness. In all the cases where there are large iron-fields there is abundance of coal near at hand for the purpose of smelting and so forth. The

great centres of iron production are Middlesborough, Merthyr Tydfil, the Black Country, and in Scotland, Coatbridge and Hamilton.

That the United Kingdom is well fitted to succeed in industrial work is shown by the foregoing considerations. Its climate is satisfactory, its workmen capable, its stores of coal most abundant, while, lastly, its iron-fields are in the neighbourhood of coal. When we come to the table of the goods it imports we shall see what its manufactures are, and where its manufacturing districts are situated with relation to its coal-fields and its ports of import and export.

## C. COMMERCE.

*a.* The actual geographical position of the British Isles is no doubt one great reason for the high commercial position which they hold. Commerce comes over them because it must pass by them. They occupy a central position between North America and the most important countries of Europe, and so far as long sea is concerned do not lie outside the route between the north of Europe and the East. This was still more the case before the opening of the Suez Canal.

*b.* The maritime and accessible position of the United Kingdom increases its opportunity for trading. It has a good long stretch of coast land, and excellent means of locomotion, both external and internal, external stretching to foreign ports from its own good ports, and internal bringing into connection the ports in the south and east with those in the west, and the manufacturing districts with the great commercial cities and the sea.

(1) With regard to **navigation**, in the first place it possesses *good seaports*. It has twenty seaports with a depth of 25 feet at high water. The following is a list of its most important ports, ranged in importance according to the tonnage of the shipping entering and clearing at them. The amounts are given in millions of tons, and do not include local and coasting traffic. (Approximate for 1892) :—

| | Million tons. | | Million tons. |
|---|---|---|---|
| London | 14 | Dover | 1½ |
| Liverpool | 11 | Leith | 1½ |
| Cardiff | 9¾ | Grimsby | 1¼ |
| Newcastle | 4¼ | Harwich | 1¼ |
| Hull | 3¾ | Swansea | 1¼ |
| N. and S. Shields | 3¼ | Middlesborough | 1 |
| Glasgow | 3 | Bristol | 1 |
| Newport | 2 | Hartlepool | ¾ |
| Southampton | 1¾ | Belfast | ½ |
| Sunderland | 1½ | | |

So far as the value of the goods imported and exported is concerned (1892), the leading seaports are—

| | Total Imports. | Total Exports. |
|---|---|---|
| London | £144,000,000 | £82,000,000 |
| Liverpool | £109,000,000 | £103,000,000 |

London does the chief trade with the East, and in respect of imports is the principal British seaport. On the other hand Liverpool does the main American trade, and leads the way in the exports of British produce and manufactures.

(2) The means of **internal locomotion** are equally important with reference to the commercial well-being of the country. At the present time locomotion takes place by river, canal, and railway, supplemented, of course, for local purposes by road transport. The United Kingdom has rivers which are fairly navigable for small craft, especially so far as rivers flowing into the North Sea are concerned. Of these the most important are the Thames, Severn, Mersey, Trent, and Yorkshire Ouse, which, together with the canals, afford a means for the transport of goods of low value and great bulk to and from the places of manufacture. There are over 3000 miles of **canal** in England, of which the most important are—

The *Grand Junction* Canal joining the Thames and Trent.

The *Oxford* Canal joining the Thames and Trent.

The *Leeds and Liverpool* Canal between the Mersey and Ouse.

The *Bridgewater* Canal between the Mersey and Manchester.

The *Grand Trunk* Canal between the Mersey and Trent.

The *Manchester Ship* Canal.

In Scotland there are two very important canals :—

The *Forth and Clyde* Canal between the Forth and the Clyde.

The *Caledonian* Canal connecting the Atlantic with North Sea, passing through Inverness.

In Ireland both the *Royal* Canal and the *Grand* Canal connect Dublin with the Shannon.

But since the great growth of railway communication the transport of goods by both river and canal has sunk into insignificance. The tonnage of those carried by the railways is probably twenty times that of those sent by canal or river.

The **railways** provide the means of circulation for the kingdom. Their course is somewhat hard to describe. Unlike those of France, they do not exclusively find their starting-point in the metropolis. The main lines of the country are, however, those which connect London with the manufacturing districts of the north. Like the Pennine Range these are a backbone for the country. There are three lines which run in this direction, diverging a little in their courses—the London and North-Western from London to Liverpool (a line goes off to Birmingham and again connects at Wolverhampton); the Midland from London through Derby to Manchester, gathering up the traffic of the Midland counties; the Great Northern from London to York. In another important direction the Great Western and South-Western bring London into connection with the west, the former passing through Bristol, the latter through Salisbury. But these western districts and the northern districts are brought into immediate and direct communication by the so-called Severn Tunnel line from Manchester and Liverpool to Bristol, and less directly by the Midland line from Bristol to Birmingham. In this way a kind of triangular communication is effected between the west, the north, and the metropolis. This is the basis of the railway system of the country. From each point of the triangle

lines run in many directions. The three north lines proceed farther, running in the direction of Scotland; the Irish mail line goes off at Crewe to Holyhead. Right across the north run the systems of the Lancashire and Yorkshire, and Midland, Sheffield, and Lincolnshire. From Bristol and from Swindon the Great Western throws out its branch into South Wales, while out of London run the continental lines, the Great Eastern lines into the eastern counties, and many others.

Railway geography is important because it shows the chief lines of communication and transport.

*c.* In several respects the commerce of the United Kingdom has been powerfully assisted by custom already established and the influences of political institutions. Trade brings trade is a true maxim, and so the fact that so much trade is already done between this country and any foreign country has been a reason for the merchants of that foreign country to ship all their goods to English ports, even if their ultimate destination be farther. In addition to this, the great tie existing between England and its colonial dominions has been instrumental in its securing the largest share of their trade. It is more natural and much easier for them, by reason of the communication already existing, to send their goods to its ports than elsewhere. Thus nearly all the Australian wool comes to England, though more than one-third is re-exported to supply the industries of the Continent.

Moreover, the United Kingdom has a well-organised and very practical banking and financial system.

As may be seen from the above, the United Kingdom has distinct advantages for commerce as well as for manufacture. In agriculture its climate seriously handicaps it, though not precluding it from producing food on a large scale compared with its area. But while it does not excel, even if it equals other nations in this respect, it stands far before most of them in the opportunities it possesses for developing its trade and manufactures. Together with mining these form the main occupation of its large and dense population—a population which grows denser as we

leave the rural or agricultural counties and approach those parts where the great towns and industrial districts lie near the coal-fields.

The standing of the United Kingdom in the world, the nature of its manufactures, and its connection with foreign lands, are well shown by the character of its trade.

**IMPORTS AND EXPORTS OF THE UNITED KINGDOM IN 1892.**

In value in millions of pounds sterling.

| | | | |
|---|---|---|---|
| Imports total | 424 | Exports total | 291 |
| Foods | 187 | Of British and Irish produce and manufactures | 227 |
| Raw material and partly raw material | about 170 | Foreign and Colonial produce | 64 |
| Unfinished manufactures | about 22 | | |
| Manufactures | ,, 45 | | |

About this we notice—

(1) That there is a very large import trade indeed.

(2) That the imports consist to a large extent of food, and of raw and partly manufactured material to be used in the manufactures of the United Kingdom.

The manufactures imported amount to about 10 per cent of the total.

(3) The United Kingdom does not produce its own food supply. It buys a great part of it. It finds it cheaper to manufacture goods and to give these in exchange for food than to employ itself in agriculture.

(4) The exports of British and Irish produce and manufacture comprise—

| | |
|---|---|
| Principal and other manufactures | about £180,000,000. |
| Coal, etc. | £20,000,000. |

Besides which are partly manufactured goods and foodstuffs.

(5) The United Kingdom receives a large portion of its imports (perhaps £70,000,000) in payment for the

great transport service which its mercantile fleet performs for other nations.

The trade must now be further examined.

*The foreign food supply. From what countries does the United Kingdom get its food?*

Stated in round numbers the foreign food supply of the United Kingdom was as follows in 1892 :—

(m=millions of pounds sterling.)

**FOREIGN FOOD SUPPLY, 187 m. (1892).**

| | | |
|---|---|---|
| **Grains** (wheat, etc.) | | 58½ m. |
| **Meats** | | 35 m. |
| Animals | 9½ m. | |
| Bacon, etc. | 11 m. | |
| Meat | 10½ m. | |
| Fish | 3 m. | |
| Miscellaneous | 1 m. | |
| **Dairy Produce,** etc. | | 25½ m. |
| Butter (and margarine) | 15½ m. | |
| Cheese | 5½ m. | |
| Eggs | 3½ m. | |
| Condensed milk | 1 m. | |
| **Vegetables and Fruit** | | 10½ m. |
| Fruits | 8 m. | |
| Vegetables | 2½ m. | |
| **Groceries** | | 40½ m. |
| Tea | 10 m. | |
| Coffee and chicory | 4 m. | |
| Cocoa | 1 m. | |
| Sugar | 20½ m. | |
| Farinaceous foods | 4 m. | |
| Miscellaneous | 1 m. | |

| | | |
|---|---|---|
| **Wine and Spirits** | | $9\frac{1}{2}$ m. |
| Wines | 6 m. | |
| Spirits | $2\frac{1}{2}$ m. | |
| Hops, etc. | 1 m. | |
| **Miscellaneous** (lard, 2 m.) | | $4\frac{1}{2}$ m. |
| **Tobacco** | | $3\frac{1}{2}$ m. |

Thus the weekly housekeeping bills of the country may be put at a little over £3,500,000. Its supplies come from many and distant lands.

*Grains* it buys chiefly from the United States, 28 m.; Russia, 5 m.; Roumania, $3\frac{1}{2}$ m.; British India, 5 m.; though as a rule the Russian supply is at least twice as large, and during the two years since 1890 the Argentine Republic has been obtaining an increasing share of the custom.

*Meats.*—From the United States it imports animals, $7\frac{1}{2}$ m.; bacon and ham, 8 m.; other meat, 5 m. In addition it gets large supplies of animals from Canada, bacon from Denmark, and meat from New Zealand.

*Dairy Produce.*—Butter from Denmark, $4\frac{3}{4}$ m.; France, 3 m. Cheese from United States, 2 m.; Canada, $2\frac{1}{2}$ m. Eggs from France, $1\frac{1}{4}$ m. Margarine from Holland, $3\frac{1}{4}$ m.

*Vegetables and Fruit.*—Of southern fruits large supplies come from Spain, $2\frac{1}{2}$ m.; and Greece, $1\frac{1}{4}$ m. Vegetables from France, $\frac{1}{2}$ m.

*Groceries.*—Tea mostly from British India and Ceylon, $7\frac{3}{4}$ m.; from China, 2 m. Coffee from Central America and West Indies, 1 m.; from India and Ceylon, 1 m.; from Brazil, $\frac{1}{2}$ m. Sugar from Germany, $9\frac{1}{2}$ m.; France, 2 m.; Holland, 2 m.; Java, $1\frac{1}{4}$ m.

*Wine and Spirits.*—Wine from France, $2\frac{3}{4}$ m.; Portugal, $1\frac{3}{4}$ m.; Spain, $\frac{3}{4}$ m. Spirits from France, $1\frac{1}{2}$ m.

*Tobacco.*—The United States sends $2\frac{1}{2}$ m.

Most of the necessary foods are also produced in the United Kingdom. In the case of wheat, however, the home production only amounts to about one-third of the quantity imported, while of the other cereals she imports

a considerable portion of her home supply, as is also the case with meats (*cf.* pp. 51, 52). Foreign meat is becoming more and more important to the British consumer. Of all countries the United States is the most important provision supplier to the United Kingdom, as from her, to set aside other and less needed articles, come large supplies of breadstuffs, and of meats and animal produce.

*From what countries does the United Kingdom get the raw material for its manufactures?*

**RAW AND PARTLY MANUFACTURED MATERIAL . 170 m.**
**(1892.)**

| | | |
|---|---|---|
| Chief raw materials, etc., for manufacture | . | 129¾ m. |
| **Cotton** (raw, 38 m.; yarn, ½ m.) | . | 38½ m. |
| **Wool** (raw, 27 m.; yarn, 2 m.) | . | 29 m. |
| **Flax**, 2¾ m.; linen yarn, ½ m. | . | 3¼ m. |
| **Hemp** | . | 2½ m. |
| **Jute** (raw, 4 m.) | . | 4 m. |
| **Silk** (raw and thrown) | . | 2 m. |
| **Goat's Hair** | . | 1 m. |
| **Metals, unmanufactured** | . | 20½ m. |
| **Timber** | . | 18 m. |
| **Leather**, 6¼ m.; hides, 2 m.; skins, 2¾m. | . | 11 m. |
| **Miscellaneous raw material** | . | 40¼ m. |

These raw materials are imported from foreign countries and brought to certain convenient ports whence they are conveyed to the places of manufacture. As a rule they come to the nearest ports, for the manufacturing districts which possess the greatest advantages are those which lie in the neighbourhood of the ports convenient for the material coming from the foreign sources of supply, and in close proximity to coal-fields. When the goods are manufactured they are either retained for home use or sent away to foreign customers. For this latter purpose they have to be shipped through exporting ports which are sometimes the same as the ports through which the raw material passes.

*What are the chief exports from the United Kingdom?*

| | 1890. | 1892. |
|---|---|---|
| **EXPORTS OF BRITISH AND IRISH PRODUCE,** | **263 m.** | **227 m.** |
| **Cotton goods and yarn** | 74½ m. | 66 m. |
| | 1890 | |
| Goods | 64 m. | |
| Yarn | 12½ m. | |
| **Metals and metal manufactures** | 58 m. | 49 m. |
| Iron and steel in different forms | 31½ m. | |
| Other metals | 6 m. | |
| Particular manufactures | 6 m. | |
| Machinery | 14½ m. | |
| **Woollen goods and yarn** | 25½ m. | 19¼ m. |
| Manufactures | 20½ m. | |
| Yarn | 5 m. | |
| **Linen goods and yarn** | 6½ m. | 6 m. |
| Manufactures | 5¾ m. | |
| Yarn | ¾ m. | |
| **Chemicals and alkali** | 5½ m. | 4¾ m. |
| **Apparel, etc.** | 5 m. | 4¾ m. |
| **Leather and leather manufactures** | 4 m. | 3½ m. |
| **Jute goods and yarn** | 3 m. | 2½ m. |
| **Silk goods, etc.** | 2½ m. | 2 m. |
| **Coal, cinders, etc.** | 20½ m. | 18 m. |

Together with the main industries concerned in distribution (locomotion and transport) and those involved in the preparation of the food produced by agriculture either in this country or others, these groups represent the main branches of employment in the country. They have developed with the growth of the country. *Agriculture* (pp. 111, 112), and *mining* (pp. 112, 114, 115) have already been treated of. It remains now to consider the growth and locality of the great manufactures. Manufac-

tures fall into several groups, which, so far as possible, are described in the following headings :—

Textile manufactures.
Iron and other metal manufactures.
Chemical, etc., manufactures.
Miscellaneous manufactures.

**Textile Manufactures—Cotton.**—This, now the most important of manufactures in the United Kingdom, has sprung into its present position during the past century or so. Till the age of mechanical inventions the cotton manufacture had been of comparative insignificance, and till Whitney's new saw-gin permitted the use of American cotton there was small prospect of improvement.

Since its early days Lancashire has been the main site of the cotton industries, for which indeed it has many advantages. Firstly, the climate of the west of England possesses the humidity required in the processes of cotton manufacture. Secondly, it possesses coal. Thirdly, the great source of cotton imports into England and Scotland is the United States of America and neighbourhood. Liverpool means a saving of expense and trouble in carriage, for to that port come more than seven-eighths of the total raw cotton imports into the United Kingdom. Liverpool owes its great importance to the large proportion (nearly three-fourths) of the cotton derived from the United States, the only other countries supplying us with any large quantity being Egypt and British India, each sending as a rule about one-tenth.

The chief seaports through which the cotton when woven into calicoes and other goods is sent away, are Liverpool, exporting over two-thirds of the total, *i.e.* 43 m., London (5½ m.), Glasgow (3½ m.), Southampton (3 m.), and Hull (4 m.) The cotton goods from the United Kingdom go all over the world, especially to the far distant parts of Africa, Asia, and to the Australian colonies. Liverpool is the leading cotton market, and Manchester the centre of the cotton industries.

The chief towns engaged in the manufacture of cotton are—

*a.* Manchester, Blackburn, Oldham, Preston, Accrington, Bolton, Bury, Rochdale — all in Lancashire. In close connection with these are Stockport and Hyde.

*b.* In Scotland cotton mills are mostly in the neighbourhood of Glasgow.

*c.* Cotton, hosiery, and lace are produced at Nottingham and Leicester.

**Woollens.**—The West Riding of Yorkshire holds nearly as high an importance in the woollen industry as does South-West Lancashire for cotton. In former times the manufacture of wool found its home in Yorkshire, largely owing to its proximity to the sheep pastures of Lincolnshire, etc., and its numberless streams. Water power became of great importance after the introduction of machinery, and when its place was taken by steam the possession of a plentiful coal supply secured the position of the West Riding. Nearly three-quarters of the imported wool (some entering England only to be transhipped for foreign countries) comes from Australasia, the next important countries, so far as the United Kingdom is concerned, being the South African colonies and some way behind British India. Most colonial wool is imported through London, which is the great wool mart of the country, while Leeds holds the position of Manchester with regard to woollen goods, acting also as a wool market. The exports of woollen manufactures of the kingdom, exceeding in value £20,000,000, go far and wide, large quantities finding their way to the United States of America and the continent of Europe. Nearly one-half of these goods pass through the port of Liverpool, while the ports on the East coast, as Hull, Goole, Grimsby, Harwich, and Folkestone, take with London an active part in the export of the rest. Woollen yarn is sent largely to Germany.

In Yorkshire woollen goods are produced at most of the towns which have sprung up in the West Riding—largely in Leeds, Bradford, Halifax, Huddersfield, Dewsbury, Batley, Wakefield, and Heckmondwike. Rochdale

in Lancashire is celebrated for flannel, the production of which has been established in Wales.

The *cloth* industry, which formerly flourished in the west of England near Stroud, has now decayed very much.

In Scotland cloth and woollen goods are made in Lanarkshire and the neighbouring district, noticeably in Dumfries and Galashiels and Paisley.

*Carpets* are produced at Kidderminster, Wilton, Halifax, Kilmarnock; while Leicester is the centre of the *worsted* and woollen hosiery industries.

**Linen.**—The raw material required in the linen industry is mainly, though not entirely, grown in the districts where its manufacture is undertaken. Some, however, is imported from Russia (value £1,500,000), and a lesser quantity from Belgium and elsewhere. This comes in chiefly at the ports of Dundee, Leith, in Scotland, and Belfast in Ireland. It is in the north of this latter country that the chief home cultivation of flax and the main manufacture of linen takes place. Belfast, with the district surrounding, is the seat of this latter. Its one disadvantage, for the climate is suitable, is the want of coal. In Scotland linen manufacture is carried on in Dundee, Dunfermline, and other places; in England at Barnsley.

**Jute,** which comes almost exclusively from India, enters to the extent of nearly two-thirds of the entire quantity at Dundee and of one-third at London. Though both in the form of yarn and piece goods its main export is from the ports of London, Glasgow, and Liverpool, it undergoes the process of manufacture chiefly in the neighbourhood of Dundee, where it is imported. The United States is by far the largest consumer of British jute goods and yarn.

**Silk,** when imported in a raw condition, comes mainly from China; when partially prepared, largely from France. Entering at London, it is thence distributed to the scattered places where its manufacture is still undertaken. Among these may be mentioned Macclesfield, Congleton, Ilkeston; for *ribbons*, Coventry; and for *mixed goods and*

*plush*, Bradford. The manufacture of plain silk goods in England is not large.

**Metal Industries—Iron and Steel.**—In importance to the country as an exporter, these industries come immediately after the textiles, though they differ from them in two respects. In the first place, the raw metal is mostly produced at home; in the second place, the metal industries are even more closely dependent upon the neighbourhood of coal. *Iron smelting* is carried on in four principal districts—in and about Middlesborough, where the great Cleveland fields supply the ore; in Barrow, in South Wales, where a good deal of Spanish iron is dealt with; in Lanark and Ayr. The chief centre, however, of the *iron goods industries* is Birmingham. The production of these in some one or other form extends for miles round that town, chiefly indeed in the direction of Wolverhampton, through the so-called Black Country. In this district and in the neighbouring country there are a large number of small towns and industrial villages actively employed, as Walsall, Dudley Port, West Bromwich, Wednesbury, Stourbridge, where galvanised iron goods are produced, Redditch (needles), Bromsgrove and Cradley Heath (chains and nails), etc. Among the more important productions, besides those mentioned, are wire, screws, bolts, tools, steel pens, pins and needles, weapons, etc.

*Machinery* is also made at Birmingham, Wolverhampton, but in addition at those places where the industries for which it is wanted are carried on. Thus Manchester, Glasgow, Bolton, Leicester, and London have very large and important machine shops; while agricultural machinery is chiefly produced at Grantham, Bedford, and Lincoln.

*Cutlery*, which is a great branch of the Birmingham industry, is, however, produced in its highest excellence at Sheffield. Sheffield turns out, also, a great many other steel goods.

*Shipbuilding*, now become so important, is carried on in the yards on the Clyde, Mersey, and Tyne, and also in Barrow and Belfast. In all these places it enjoys the advantages of proximity to the iron and coal-fields.

*Other Metal Manufactures.—Brass* working is carried on in the Birmingham district, as also in London, while *copper* founding takes place chiefly in South Wales. The so-called *tin plates*, really iron plates coated with tin, which have been one of the most valuable metal exports, are made in South Wales.

The metal exports are sent to many lands, the most important customers for the products of this branch of industry being the United States and our colonies, after which rank the leading continental countries. Machinery goes in very large quantities to British India, Germany, France, Russia, and to the Australasian colonies.

**Chemicals.**—The manufacture of chemicals has attained very large proportions in the United Kingdom. In the main it is carried on in three neighbourhoods, those of Liverpool, Newcastle, and Glasgow. The alkali industries near Liverpool lie somewhat to the south, being situated chiefly at Widnes, St. Helen's, and in Cheshire. They possess the great advantage of lying near or in the salt district, as well as near an abundant supply of coal. As some of the products of chemical manufacture are largely employed in the production of other commodities, it is not surprising to find some of these situated within a comparatively short distance, *e.g.* glass at St. Helen's, soap near Liverpool and Glasgow, as well as on the Thames.

**Earthenware and Glass.**—Glass is manufactured mainly at Birmingham and at St. Helen's, the works of which latter town have developed to such an extent in late years that they now turn out about half the total glass produced in the kingdom. Earthenware and china are manufactured in Staffordshire, near Stoke, in the district well known as the Potteries.

**Leather.**—Of other industries perhaps the most important is that of leather. It has, of course, very many branches, extending from the rudimentary stage of tanning to the making of boots, shoes, and gloves. The raw material for this industry is largely imported. *Hides and undressed* leather come chiefly from British India and Australasia. *Dressed leather*, on the other hand, comes from continental

countries, France, Holland, and Germany. About one-half of the imports pass through the port of London. Leeds is perhaps the most important leather market, though the manufacture is very much scattered throughout the country. Thus *boots and shoes* are produced in many places, among which Northampton, Leicester, and Bristol are important. A considerable amount of *saddlery and harness* is made in and near Birmingham, while *gloves* are produced at Worcester amongst many places.

**Commerce and Commercial Towns.**—The leading commercial towns in the United Kingdom are *London*, *Liverpool*, *Manchester*, *Leeds*, *Birmingham*, and *Glasgow*. Of these the two first are less connected with manufacture than are the rest. London, indeed, is the great commercial capital, not of this country alone, but of the world, and in it centre the financial and other institutions which represent the business as apart from the manufacturing side of trade.

The leading countries with which the United Kingdom is engaged in trade are the United States, France, Germany, though with the colonies and other foreign countries its trade is also very large.

**With the United States of America** her trade is about twice as large as with any other single country. The imports *from* that land are much greater than the exports *to* it. From it we obtain large quantities of foodstuffs and also of raw materials, especially cotton and copper, while to it we send metal goods, woollen and other textiles, and less quantities of a great variety of commodities.

**With France.**—From it we receive wines and brandy, silken and woollen goods, and many minor foodstuffs. To it we send a large quantity of colonial wool, also woollen goods, coals, and various minor manufactures.

**With Germany.**—One principal import from Germany consists of foodstuffs, including a large quantity of beet sugar, and to it we send wool and woollens, cotton and cotton goods, and metals and machinery.

## FRANCE

France is bordered on some sides by the sea, on the others by mountain ranges. But on the north-eastern frontier, where Belgium and Germany touch, one of the more highly-developed districts, there is no natural barrier. So far as **external communication** is concerned, the long sea-coast offers advantages which, great though they be, would be greater if more ports were readily accessible. On the other hand, the high mountain ranges in the neighbourhood of Spain (Pyrenees), and Italy (Alps), present difficulties which the railways entering those countries from France have circumvented, rather than overcome. Within the country itself the more important ranges of mountains are the Cevennes, the mountains of Auvergne, and the Vosges. The mountain system, of which these are part, divides the two plains of France. The greater plain sweeps round from the north to the west, and thence to the south; the lesser is the plain of the valley of the Rhone. In the first there are three districts, which differ in their characteristics, occupations, and productions, viz., the north-east, a flat, level stretch of land with coal in the Pas de Calais, and rising up into the highlands of Champagne; Normandy and the surrounding country; the wine country of Bordeaux.

With regard to **political** influences affecting its development.—(1) France, though subject to frequent changes in political government, is, so far as the ordinary civil administration is concerned, orderly and undisturbed. It is not too heavily taxed. (2) Its customs tariff is a protective one, duties being charged on most articles imported with a view both to revenue and the protection of home industries. When compared with Germany and the United States of America the customs duties are not high. (3) It has adopted the metric system.

Position of France with regard to the specific conditions favouring, A. **Agriculture.**—It possesses in a high degree

the chief conditions on which agriculture depends. (1) Owing to the custom of the country and the action of the Napoleonic law of inheritance, the number of small proprietors cultivating their own land is large. It is reckoned at 4 millions. Many of the products, as vines, are peculiarly suitable for the system of small cultivation (*petite culture*), requiring care and assiduity. (2) The soil is fertile and productive. (3) The climate is good and diverse. In Normandy and the north generally it favours the growth of the foodstuffs and fruits of the temperate zone; in the south-west it is much milder; while in the extreme south-east a very considerable average heat is maintained. There is more rain in the west than the east.

France is in the main an agricultural country, with a large number of small provincial towns serving as centres for the agriculture of their districts, or as the place of small incidental manufactures.

Of the **chief agricultural products**, *grain* is grown over a large area, but mainly in the north, the cereals most cultivated being wheat and oats. The supply being insufficient, France supplements its home production by imports of wheat. One kind of grain, *maize*, is cultivated mostly in the south, in the districts of Languedoc, Guienne, etc. *Beetroot*, for the purpose of sugar extraction, is cultivated in the north-east, principally in the departments of Aisne, Nord, Pas de Calais, Somme. *Flax* grows in the north from Flanders, through Normandy to Brittany. *Hemp* in the same regions. *Pears, apples, and other northern fruits and vegetables* are grown in profusion in the north, very largely in Normandy. In the south flourish the *olives* (Rhone valley), the *mulberry, oranges and lemons, figs*, etc.

*Wine*, which is a product of very great importance, is produced in three important districts, *Champagne* (department of Marne), where the wine is mainly of an effervescent character; *Burgundy* (Côte d'Or, Rhône Sâone), where the vines are cultivated to the best advantage on the slopes of the rising hills; *Bordeaux*, largely in the department of the Gironde.

*The best cattle* (total 13 millions) *and horses* are in Normandy and in the north generally, where dairy farming is carried on. The manufacture of *cheese* takes place also in many other districts towards the east. *Sheep farming* is of course a large occupation, though the yield of wool is insufficient for the home demand. The best *wool* comes from Normandy, and from the large districts of Champagne and Burgundy. The total number of sheep (1891, 21 millions) has declined of recent years.

B. **Mining and Conditions of Manufacture.**—With regard to manufacture, France stands in a peculiar position, in some directions having great, in others but trifling advantages.

*a.* Its *climate* is one which on the whole allows of regular and continuous exertion. So far as the manufacture of silk is concerned, the climate of Lyons and the southern district is very favourable.

*b.* The *workmen are industrious, and possess* in a high degree *skill* and artistic taste, which qualities combined enable them to rival and surpass English workmen in particular branches of industry. On the other hand, they are inferior to these in the general intelligence, resource, and strength required in first-rate mechanics.

*c.* As France does not produce sufficient *coal* for her own use, supplies to about the value of £5,000,000 have to be imported from foreign countries. Of these England sends more than half; Belgium is of next importance.

The *home coal supplies* come mainly from the following districts:—

Northern coal-field, situated in the departments of Pas de Calais and Nord. This is the largest and most important.

Loire coal-field, in the department of Rhône and Loire. The yield is good, and is of particular importance as being situated near the manufacturing silk towns, especially St. Etienne, where there are valuable collieries.

Alais coal-field, in the department of Gard.

Sâone and Loire coal-field, in the department of that name. So far as the steel industry is concerned, this is

one of the most important, Creuzot, the great iron and steel town, being one of its centres.

In addition, the production of coal in less amounts takes place in the departments of Aveyron, Allier, Haute-Loire, etc.

*d.* The *production of iron and steel* takes place partly in the neighbourhood of certain of the above districts, but partly also in the departments of Meurthe et Moselle, Maine, etc., where it is chiefly dependent on supplies of foreign, chiefly German, coal. As compared with England, France is heavily handicapped by the distances which frequently separate the iron and coal deposits. The most important developments have taken place in the neighbourhood of *Creuzot* and *St. Etienne*, where the two minerals are found in proximity, and where a great industry has grown up. Taken together, France has, in many localities, considerable opportunities for the development of manufacture, but none nearly so great as those possessed in the north and other districts of England. The people are not so eminent as mechanics, and coal is comparatively scarce.

C. **Commerce.**—*a.* The position of France is exceedingly favourable to the growth of trade. On one side it lies open to the commerce of Germany, the United Kingdom, the Netherlands, etc., on another to the Atlantic, while its access to the Mediterranean is most important—particularly so since the opening of the Suez Canal.

*b.* On all these coasts it has good **seaports.** The more important of these are—on the Mediterranean, Marseilles and Cette; on the Atlantic, Bordeaux, Rochelle, St. Nazaire and Nantes; on St. George's Channel, Dunkirk, Calais, Boulogne, Dieppe, Havre, St. Malo. In addition there are the naval ports of Brest, Cherbourg, Toulon, and Rochefort. The most important seaports are—

Marseilles, *importing* silk, raw sugar, cotton, grain, etc., and *exporting* silk fabrics, wines, woollen goods, soap, etc.

Bordeaux, *importing* colonial produce, hides, etc., and *exporting* wines, spirits, fruits, etc.

Dunkirk, *importing* coal, iron, nitrates, etc., and *ex-*

*porting* wheat, wool, and also to other French ports, coal.

Cette, doing a large coasting trade in the Mediterranean.

Havre, *importing* cotton, wool, colonial goods, and *exporting* cotton and woollen manufactures, laces, gloves, leather, etc.

Nantes, *importing* coal, pig-iron, cotton, colonial goods, etc., and *exporting* wheat, refined sugar, prepared goods, etc.

The **connection between the interior districts** of the country, both with themselves and these various ports, is maintained by—

i. *The Water System.*—The more important of the many navigable rivers which France contains are the Seine, Loire, Charente, Garonne, Adour. In all it has been calculated that there are some 4000 miles of navigable river waterway. But the utility of the river system has been vastly increased by the canals which, amongst other advantages, connect the principal rivers. Of these the most important are *Canal du Midi*, joining the Garonne and the Mediterranean; *Canal d'Alsace*, between Rhine and Rhone: the *Rhine-Marne Canal; Canal du Bourgogne*, connecting the systems of the Seine and the Loire; and the *canal between Nantes and Brest.*

ii. *The Railways.*—With few exceptions the main railroads in France run between the various districts and Paris, whence the lines radiate out in all directions. Paris is the centre of France, and occupies a position quite different from that held by London in England, where so much of the industrial activity has its home in the north. From Paris there run—

*The Northern Railway* (Chemin de fer du Nord), through Amiens into the north and north-eastern districts.

*The Western Railway*, having its main line to Havre, and another line to Nantes, with a network in between these two trunk lines.

*The Orleans Railway*, having one long trunk line from Paris to Orleans, Toulouse, etc. From Orleans lines branch to Nantes and to Bordeaux.

*The Eastern Railway*, having several lines running from the capital to the German border.

*The Lyons and Mediterranean Railway*, connecting Paris with the silk district and Marseilles with an important branch from Marseilles to Cette.

*The Southern Railway* is the one great exception to the rule that the railway lines start from Paris. It serves to connect the south-west and the south-east of France, running from Bordeaux to Toulouse, Narbonne, and Cette.

The **imports and exports of France** have varied very much. In 1891 they were—

Imports £191,000,000. Exports £142,000,000.

Of the imports a smaller proportion consists of **important foodstuffs** than is the case in the United Kingdom. The more prominent of these being—

| | |
|---|---|
| **Grain and flour.** | **Fruit.** |
| **Coffee, etc.** | **Wine.** |

With regard to these it is important to note that the wine imported comes partly for home consumption and partly as a raw material for admixture with certain French wines and re-exportation. Wine is imported chiefly from Spain. Italy also contributes a considerable amount.

Of the **imports of raw material** the most important are—

| | |
|---|---|
| **Silk.** | **Wool.** |
| **Cotton.** | **Flax.** |
| **Hides and skins.** | **Coal.** |

Of the exports the principal are—

| | |
|---|---|
| **Silk goods.** | **Woollen goods.** |
| **Cotton goods.** | **Leather and leather wares.** |
| **Refined sugar.** | **Wines.** |

There is also a large production and export of various goods, partly connected with the textile industries, partly of a miscellaneous character.

**LEADING INDUSTRIES.—Silk.**—Raw silk is produced in France in the south-eastern departments, as Gard, Vaucluse, Ardèche, Drôme, etc., and, in addition, imported from China, Japan, etc., and Italy, the imports from Asiatic countries entering chiefly at the port of Marseilles. In the south-eastern departments a large number of people are employed in silk-throwing; but the more developed manufacture is centred in certain towns. *Lyons* is the great centre of the silk industry of France, and of the silk trade not only of France, but of Europe. Its silk goods and velvets bear the highest reputation. Silk ribbons are produced at St. Etienne, and minor silk fabrics at the places mentioned, and at Paris. The silk goods of France are sent to all countries.

**Woollens.**—The sheep of Champagne yield good wool, in addition to which large quantities come from the Argentine through the ports of Havre and Dunkirk, and from Australasia over England. The woollen manufacture is chiefly in the north-east quarter of France, deriving supplies of coal in the more northerly districts from the great northern coal-field, in the more easterly districts from the Saar valley. In the north the chief woollen towns are Roubaix, Turcoing; the worsted is carried on largely at Rheims, while at Sedan, Elbœuf, Louviers, large quantities of cloth are produced. Carpets are manufactured largely at Paris, Beauvais, Roubaix.

**Cotton.**—The raw material is imported mainly from the United States, entering at the western and north-western ports, at which large quantities of coal also enter. The chief town is Rouen, after which ranks Lille.

The linen industry is plied chiefly in the north of France, while for the jute manufacture Dunkirk is the centre.

**Metal Industries.**—In addition to their industries as centres of iron-smelting, St. Etienne, Creuzot, and Lille take an important part in the production of heavy

iron goods. Lille does a large trade in small iron and steel goods and machinery. Cutlery is best produced at Langres, Nogent, Thiers, and Paris.

**Leather** industries are carried on at various places, Annonay being the most important for tanning, etc., Paris and Grenoble for gloves, Toulouse and Paris for boots and shoes.

The manufacture of **sugar** takes place chiefly in the beetroot districts of the north, largely at Lille, Amiens, Rouen.

**Paris**, at once the capital, commercial, and financial centre of France, is also a manufacturing city of no little importance. Its share in the leading manufactures has been described, but to those must be added its large production of fancy articles, both in leather, earthenware, and metal, and its trimming and millinery trade.

The countries with which France carries on the largest trade are the United Kingdom, Belgium, Germany, the United States.

## BELGIUM

Belgium, while the smallest country in Europe, is the most densely populated and one of the most busily employed. Much of its prosperity it owes to its situation, but much also to the industry of its people. In each of the three great departments of human occupation it has made considerable progress, in two, indeed, holding a very high position.

In **agriculture** it owes but little to climate, which is moist and temperate. Nor is its soil of any particular fertility. As in France the number of peasant or small cultivating proprietors is very large, and with untiring industry they have cultivated the land with minute care,—corn, flax, potatoes, beetroot, being among their chief products. The most important corn crop is that of oats. These are grown to the greatest advantage in the western and southern provinces. Despite this, a large quantity of grain is annually imported, to the value of £8,000,000 or

£9,000,000. The sheep are few, not amounting to one million, being exceeded in number by cattle.

In **manufacture** it has great advantages, having a very high yield of coal in comparison with its size. There are two main coal-fields, by Namur and near Liège, both being busily worked. In addition iron is found and smelted in or near the same districts. The advantages, added to the temperate climate and the industry of the inhabitants, have combined to render Belgium, despite its smallness, one of the most important manufacturing countries in Europe, the manufacturing districts lying chiefly on the east and south-east.

In **commerce** its position—standing as it were between Germany, France, and England—has been of great importance. Though its coast-line is very limited (40-50 miles), it has one great commercial port, Antwerp, one good fast traffic port, Ostend, and others that are inferior and now of less importance, as Ghent and Nieuport. **Antwerp** has first-rate accommodation for shipping, and does a large trade in the *import* of cotton, grain, coffee, timber, hides, etc., and in the *export* of coal, iron, and other goods. Besides this the internal communication is good, a matter of great importance on account of the large trade both transit and otherwise, passing over its land frontier. Both the Meuse and the Scheldt are navigable; the canal system is well developed, and the length of railroad nearly 3000 miles. Of commercial towns the chief are Antwerp, Brussels, Ostend, Ghent.

The exports from Belgium are, on an average, a little under £50,000,000, and the imports a little over. Of these some of the more important are—

| Imports. | Exports. |
|---|---|
| **Grain.** | **Coal and coke.** |
| **Animals and meat.** | **Linen and hemp manufacture and yarn.** |
| **Wool.** | |
| **Flax and hemp.** | **Woollen yarn manufactures.** |
| **Cotton.** | **Flax.** |
| **Hides.** | **Glass.** |
| **Wood.** | **Iron and machinery, etc.** |

**Linen and hemp** spinning and weaving are carried on extensively in Belgium, a great demand being made both for home and foreign flax. Linen is manufactured near Courtrai and Ghent.

**Woollen** goods are produced (mainly pure Argentine wool imported at Antwerp) in the neighbourhood of Verviers.

**Cotton** is not so important in Belgium as in many other countries. It chiefly centres round Ghent.

The **metal** industries are very highly developed in most of their branches, the most important district being that of Liège and Charleroi, where a plentiful supply of coal lies ready to hand.

Of the **chemical** and allied industries several are very large. *Salt* is found in several districts, and near Brussels are very important *chemical* works. The *glass* of Belgium is of high reputation, particularly so in the case of plate glass, etc. *Paper* is also a considerable export. *Lace* is produced in several places, and notably in Mechlin. *Leather goods*, *beet sugar*, and *fancy* articles are also prominent manufactures.

The chief **trade** is carried on with France, the United Kingdom, Holland, and Germany.

## HOLLAND

The position of Holland has not been favourable for anything save commerce. It is a land snatched, but barely snatched, from the sea. Thus in every essential sense, and to both its advantage and its disadvantage, it is a marine country cut up in almost all directions by a network of canals and navigable rivers.

Owing to its climate, severe and damp, and its soil, which is not fertile, its **agricultural** development is not widespread, despite the great industry of the people. One-third of the land is capable of cultivation, another third is in pasture, and the rest, with the exception of the space

occupied by the towns, is of little or no value. The most important crops are those of rye and oats, after which ranks wheat; and the most productive districts lie in the north and west. Much grain is imported. Potatoes, beetroot, and flax are also grown in considerable quantities. Pastoral pursuits are more favourably situated, and though Holland is small, it has, considering its size, a large number of cattle ($1\frac{1}{2}$ millions), the source of much wealth in the shape of butter and cheese. There are but few sheep.

So far as **manufactures** are concerned, Holland has no home supplies of iron, and practically none of coal; a very little coal is found in Limburg. Though its imports of coal are large, exceeding 4 million tons, they do not enable it to maintain many manufactures. The state of these appears from a consideration of the chief imports and exports.

| Leading Imports. | Leading Exports. |
|---|---|
| **Grain and flour.** | **Butter and margarine.** |
| **Iron and iron wares.** | **Sugar.** |
| **Coal.** | **Flax.** |
| **Colonial goods.** | **Paper manufactures.** |
| **Raw cotton and wool.** | |

Some small amounts of cotton and woollen goods are exported, but most of those produced are retained for home consumption. The sugar industry is, however, important as a means of employment and support. Both cane and beet sugar are refined in the Dutch factories, which are mostly situated in North Brabant. In this, as in other instances, as tobacco, Holland is largely engaged in preparing for the market the productions of its colonies. Earthenware is made in many places, notably at Delft.

In **commerce** Holland occupies a vastly different position from that described above. There are many good ports, of which two are of European importance.

*Amsterdam*, lying on the Amstel, and importing much colonial produce, as sugar, coffee, tobacco, is the trading capital of the country. It is an important banking centre.

*Rotterdam*, on the Meuse, is however the most import-

ant maritime city. Many railways converge there, and the greater portion of the colonial trade enters the country through it. It *imports* grain, coals, ores, etc., and colonial goods, as sugar, coffee, tobacco, rice, etc. It *exports* manufactured goods, sugar, butter, etc.

Owing to its geographical position and its relation with the East Indies, a most extensive transit trade takes place through Holland. Many goods come from its colonies and other places, as coffee, tobacco, Peruvian bark, etc., and are distributed through Europe. Many goods pass through Holland on their way between other countries. This transit trade, as indeed the whole commerce, is greatly facilitated by the admirable canal system and the railways.

## GERMANY

Germany is a Federal Empire, consisting of twenty-five states and the Reichsland (Alsace-Lorraine). Of the states five—Prussia, Bavaria, Saxony, Baden, and Würtemberg—are important, the first named holding a predominant position, both economic and constitutional.

The north of Germany, comprising the larger part of Prussia and smaller states, of which Brunswick and the two Mecklenbergs are the most important, forms part of the great northern central plain of Europe, which extends through Russia to the North Sea and the Channel. Its climate is severe, owing to its exposure and the comparatively small extent to which it is affected in any but its most westerly portion by the moderating influences of the westerly sea winds. The south of Germany is considerably warmer, a condition particularly noticeable in the south-west, where the country is sheltered on the east by the ranges of the Schwarzwald, on the west by the Vosges.

The boundaries of Germany are on the south-east mountainous, the Bohemian mountains, Erz Gebirge and Riesen Gebirge, and on the south they partake of the general elevation of Switzerland. On the western side the

frontier is an artificial one. Within the country there are small ranges and elevated tablelands, which have but small climatic importance, save in their immediate localities.

The **political conditions** are favourable to advancement. The country is orderly and law-abiding. In no other land has a greater amount of care and intelligence been bestowed upon industry and trade. The standard of general education is high. The whole country, together with the duchy of Luxemburg, now forms one Zoll Gebiet (Custom Union), the customs duties being high and essentially protective for home industries.

A. **Agriculture.** — The agricultural development of Germany is very unequal. So far as *soil* is concerned the southern states—Bavaria, Würtemberg, and Baden—have considerable advantages. In these states the percentage of really fertile land is large. But in Prussia, and particularly in the eastern provinces of Prussia, the soil is poor and would yield but little, except for the great industry and science with which it has been cultivated. The *climate* of the north, in conjunction with the soil, has led to the cultivation in these parts of the more hardy cereals, rye and oats, rather than wheat. Of the total area of Germany about half is in active cultivation.

Of **agricultural products** *grain* is of course the most important. Oats and rye yield the two largest crops. The former is chiefly cultivated in Rhenish Prussia, in the Prussian provinces of Saxony, Silesia, and Hanover, and in the kingdoms of Bavaria and Saxony. Rye, which, in addition to potatoes, is the great foodstuff of the people in the north and in Bavaria, is grown chiefly in the Prussian provinces of Brandenburg, East Prussia, Pomerania, Posen, and Hanover, and also in Mecklenburg-Schwerin, in Bavaria, and in the kingdom of Saxony. Wheat, while cultivated, as indeed are all the cereals, over a large area, is so to the largest extent in Bavaria, and in Prussian Saxony, and the Rhineland. Barley is grown largely in Bavaria. *Potatoes* are a most important crop in Northern and North-Eastern Prussia.

*Beetroot* is grown mainly in the Prussian provinces of Saxony, Silesia, and Hanover, and also in Brunswick and

Anhalt, the district formed by these being the most important for sugar production in Europe and elsewhere. A very large number of the factories are in or near Magdeburg, which is thus becoming the great sugar manufacturing centre. *Vine* cultivation takes place in the valleys of the Rhine, Neckar, and Moselle.

With regard to *live stock* the countries richest in cattle proportionately to their size are those in the south, Bavaria, Saxony, Würtemberg, and Hesse. On the other hand the chief sheep districts are in North Germany.

B. **Mining and Conditions of Manufactures.**—Germany possesses in a very high degree the main conditions needed for the development of manufacture. *a.* The people are industrious. *b.* The climate allows of continued and regular exertion. *c.* There are large stores of coal and iron. Germany has been rapidly developing its coal resources, and now produces some 73 million tons of *coal*, and in addition some 20 million tons of lignite. Of all European countries it stands next to England. *Coal production* takes place mainly in the following districts: in Rhenish Prussia (Ruhr valley), and Westphalia, in Silesia, in and about Saarbrücken, in Saxony. *d.* Near to these are the iron districts, iron being found in the neighbourhood of the coal in Saxony and Silesia, and in the valley of the Saar, also in Rhenish Prussia. In some of these districts *iron and steel* production is carried on on a very large scale. This is particularly the case in the district of the Ruhr, where the most important metallic industries are situated (see p. 148).

**Other minerals.**—*Copper* is produced to a considerable extent in the Harz and Westphalia; *zinc* in very great quantities in Silesia, the Harz, and near Aachen: while lead is found in the Harz, where there are silver mines. The production of *salt* takes place in the Prussian provinces of Saxony and Hanover, and in Thuringia and Würtemberg.

C. **Commerce.**—Independently of its own productions and its own needs, Germany does not occupy a geographical position fitted to give a large share in general trade. In one respect it is at a great disadvantage, for despite coast-

line, which it possesses on the north and north-west, it has but few ports which lie well open to foreign trade. Most of its coast-line lies on the Baltic, and its ports there, in addition to being removed from the great marine highways, are often obstructed at the mouth. The chief **seaports** are as follows—

Hamburg, on the Elbe, with an annual movement of some 10 million tons, is one of the most important ports in Europe, *imports* colonial produce, cotton, wool, coal, manufactured goods, machinery, etc., and *exports* manufactured goods, salt, dairy produce, etc. Similar to Hamburg is the small neighbouring port, Altona.

Bremen and Bremerhaven. These two ports, of which the last named is by far the larger so far as shipping entries and clearances are concerned, the former the most important in commerce, lie on the Weser. The leading *imports* are colonial goods, coal, iron, machinery, etc. The *exports*, woollen goods, linen, glass, rags, wheat, etc.

Kiel, both a commercial and a naval harbour, lies in the Baltic, and does a trade of about three-quarters of a million tons, *importing* coals, timber, and *exporting* grain and timber.

Lübeck, another Baltic port doing about as much trade as Kiel, imports and exports goods somewhat more varied in character.

Stettin is the most active of all the Baltic ports, and *imports* coals, iron, petroleum, colonial goods, agricultural machinery, etc., and *exports* grain, flour, potatoes, timber, etc.

There are several other ports of fair importance in the Baltic—Danzig, Königsberg, Memel, Geistemünde, and Swinemünde.

**Internal communication** is very thorough.

i. The roads in Germany are exceedingly well kept, and in many districts, as, for instance, Baden, of considerable importance for local commerce.

ii. There is good means of transport both by river and canal. The more important navigable rivers are the Elbe, Weser, Rhine, Oder, Vistula, Pregel, Memel.

The water system is largely completed by the canals which join the various rivers, and thus extend a network of water communication over the country. Among the most important are the *Friedrich-Wilhelms Canal* (from the Spree to the Oder), *Finow Canal* (from Havel to Oder), *Rhine-Marne Canal*, all these with heavy traffic. In addition there are *Bromberger Canal* (from Oder to Vistula), *Plauen Canal*, *Ludwig's Canal.*

iii. The total length of railroad in the country exceeds 25,000 miles. Most of the *railways* are owned by the State. The principles governing their development have been many. There are, firstly, the international lines of communication; secondly, the lines connecting the different states and chief towns; and, lastly, often coinciding with one or other of the above, are the railways which open up and meet the needs of the great industrial districts, seaports, and centres of commerce. Thus the districts with most highly-developed railway communication lie between the seaports on the North Sea (Hamburg and Bremen), Berlin, and the *three industrial districts* in, Saxony, Rhineland and Westphalia, and Alsace-Lorraine. Foremost among them are the Prussian provinces of Rhineland, Westphalia, Saxony, Silesia, and the kingdom of Saxony, Hesse, etc.

### The **Foreign Trade** of Germany.

**Imports** during the last three years have been about £205,000,000.

**Exports** during the last three years have been about £161,000,000.

In 1891 the total imports were £208,000,000, of

which some 36 per cent consisted of foodstuffs, 42 per cent of raw material, and 22 per cent of manufactured articles.

Of the exports, in 1891 amounting to £158,000,000, 64 per cent were reckoned as manufactured.

| Leading Imports. | Leading Exports. |
|---|---|
| **Grain and flour.** | **Sugar.** |
| **Raw wool.** | **Woollen yarn and manufactures.** |
| **Raw cotton.** | **Cotton yarn and manufactures.** |
| **Coffee.** | **Coarse iron wares.** |
| **Raw silk.** | **Silk manufactures.** |
| **Hides.** | |

These give us some clue to the development of the general industries, though in the case of Germany it is particularly necessary to remember that there is a large home industry in many instances to meet home requirements.

**LEADING INDUSTRIES.—Textile; Woollens.**—In addition to the home supply a large quantity of wool is imported from Australia and from South America. The manufacture of woollen fabrics takes place mainly in Rhenish Prussia (Aachen is important), in the kingdom of Saxony, and in Silesia. Of the goods exported, after the home industry is satisfied, the largest quantity is sent to Austria.

**Cottons.**—Two countries, United States of America and British India, contribute four-fifths of the total supply. There are some important cotton factories scattered through the country, but the main industry centres in the great manufacturing districts situated in close proximity to the coal-fields. In the Rhenish province the cotton manufacture is most important, among the chief cotton towns being Elberfeld and Barmen, Dusseldorf, Gladbach, and in Westphalia Bielefeld. In Saxony the cotton factories are mostly in the neighbourhood of Chemnitz. Mühlhausen is a very busy cotton manufacturing town. The industry is also pursued in Silesia. The cotton manufactures are widely distributed, in this instance, too, Austria proving the most important customer.

**Silks.**—Silk goods and mixed silk goods are largely

manufactured in the Rhenish district, where Krefeld is particularly important for ribbons. Silk manufacture also takes place in Elberfeld, etc. Silk goods are sent in considerable quantities to the United Kingdom and the United States of America.

**Linens, etc.**—The linen manufacture is much more extensively diffused throughout the country.

**METAL INDUSTRIES.**—The mineral wealth of Germany has already been described. Its richness and its nearness to plentiful supplies of coal have led to an extensive development of the more fundamental metal industries. **Iron and steel** goods are produced in very large quantities in both Rhenish Prussia and Westphalia. In addition to Essen, where the celebrated Krupp works are established, there are many important towns, as Dortmund, Iserlohn, Hagen, Solingen, which rival the Birmingham district in the variety of their goods. The district is very similar, there being many little manufacturing towns and many manufacturing villages, where such goods as nails, wire, hooks, bolts, etc., are produced. Other important centres for iron and steel are the Silesian towns, as Görlitz, Löbau, etc., and Mühlhausen. Machinery is produced in the industrial centres at Berlin, Chemnitz, Magdeburg, Mühlhausen, Breslau.

Germany imports a good deal of iron from the United Kingdom, but it sends thither more iron goods than it receives. Large quantities of its iron products go to Russia, Holland, Austria, and Switzerland.

**Brewing** is a great German industry. Though for local purposes it takes place throughout the country, the more important breweries are in Bavaria.

The **commercial cities** of Germany are numerous. Berlin, in addition to being the capital, leading money market, and commercial city, is the home of various manufactures. Frankfurt on the Main is a celebrated financial market, and Leipzig, Magdeburg, and Cologne are all great commercial cities.

The countries whose trade with Germany is most important are, in the order of their importance, the United

Kingdom, Austria, Russia, the United States, Holland, France, and Belgium.

## AUSTRIA-HUNGARY

Austria-Hungary is a Federal Empire consisting of many various countries of different language, race, and custom, and in very different stages of development (Austria, Hungary, Bohemia, Styria, Bosnia, and Herzegovina).

Its frontier is long, but almost exclusively a land frontier, bordering on Germany, Russia, Roumania, Servia, Italy, and Switzerland.

Since it is, on the whole, in a very undeveloped condition, and since, as regards both commerce and manufacture, it suffers under profound disadvantages, having but a poor coast-line and not possessing coal and iron in near proximity, its main reliance is upon its agriculture.

**AGRICULTURE.**—In this respect it has many advantages. Its climate is suitable for the main crops, since, by reason of the hot summers and the moderate and fairly regular rainfall which prevails in most parts, the severity of the winter is not injurious. The most important cereal is **wheat,** which flourishes best in the large plains—principally in Hungary and Bohemia. Hungarian flour holds a very high position. **Rye,** which is the principal breadstuff of the country, is grown very widely, as are also oats and barley. Of other productions **flax,** one of the most important, is produced in Bohemia and Moravia. **Vine-growing** is carried on in many districts, but to especial advantage in Hungary. Beetroot for the purpose of sugar extraction is widely cultivated.

If the methods of cultivation were a little more modern, and if greater skill were employed, the rich soil of Hungary and other parts would, it is said, yield far more largely.

**Cattle** are kept in some numbers (about 13 millions), and have been increasing of recent years. On the other

hand the number of **sheep** is almost stationary, by far the larger portion being in Hungary. The country imports wool from abroad to the value of some £2,500,000.

**COMMERCE.**—Austria-Hungary suffers from a most serious drawback with regard to its development, through the *want of any sea-coast beyond a narrow strip on the Adriatic.* It has, nevertheless, two ports of fair importance, **Trieste** and **Fiume.** In addition its system of internal communication is anything but well developed. Two **rivers,** the Danube and Elbe, offer with their tributaries fair opportunities of navigation, but the canal system has been much neglected. Though **railway** communication has been extended of recent years, the Empire possesses a very insufficient amount for the development of its resources.

| Leading Imports. | Leading Exports. |
|---|---|
| **Raw cotton.** | **Sugar.** |
| **Raw wool.** | **Grain.** |
| **Coal.** | **Wood.** |

**MINING AND MANUFACTURES.**—Of the prominent minerals valuable in themselves and also as necessary to a manufacturing country, Austria possesses a good iron-field, but only an insufficient supply of true **coal** (lignite is yielded in much larger quantities). Very unfortunately the two important minerals are not found in proximity. True coal is most freely yielded in Bohemia, near Pilsen, and Silesia, whereas the richest **iron deposits** are in the Alps and in Styria and Carinthia. In other minerals Austria-Hungary possesses great sources of wealth, as yet undeveloped; gold and silver are produced, also lead, and in Idria quicksilver. Salt is most abundant, particularly in Galicia, in the salt mines of Wieliczka, and in Hungary at Marmaros.

**INDUSTRIES.**—As might be expected, both from the state of development and also from the deficiency in coal, etc., these are not very forward. **Cotton manufacture** is most highly developed in Austria and Bohemia, in the latter country Reichenbach occupying a position of con-

siderable prominence. Woollen manufacture is carried on chiefly in the north, and largely in the neighbourhood of Brünn. **Silk manufacture** is growing in the Tyrol, while the linen industry is spread widely over the country. The **metal industries** are rising gradually, mainly in Austria and Styria, while in Bohemia glass production, chiefly of the more common kinds, has already attained importance in foreign trade. **Brewing** is most important at Pilsen.

Of commercial centres the most important are Vienna, Prag, and Brünn.

## SWITZERLAND

Switzerland is entirely cut off from the sea, and being, in addition, shut in by mountain frontiers, is dependent on many sides upon suitably-developed passes for access to other countries. This fact, together with the directions given to the occupations of the people by its mountainous character, and by its position as holiday resort for other nations, has largely determined the course of its development.

**AGRICULTURE.**—It is rather a pastoral than an agricultural country, as only a comparatively small amount of land is suitable for arable purposes. Much **wheat** is imported. In strong contrast it possesses fine meadow and grazing lands, on which are pastured its herds of cattle. Butter and cheese are made from the milk.

**COMMERCE.**—Since the development of the railways and the opening of the mountain passes, a large transit trade passes through Switzerland. The leading commercial towns are Bâle, Zürich, and Geneva. Of the passes the more important are the St. Gothard into Italy, and the Mont Cenis into France. For internal communication the country relies almost entirely upon roads and railways.

| Leading Imports. | Leading Exports. |
|---|---|
| **Grain.** | **Silk goods.** |
| **Raw silk.** | **Cotton goods.** |
| **Woollen goods.** | **Watches.** |
| **Raw cotton.** | **Cheese.** |
| **Metal goods and machinery.** | |

**MINING AND MANUFACTURES.**—Switzerland possesses but poor and very insufficient amounts of both coal and iron. For these it is driven to rely upon importation, but as a partial set-off to its great poverty in coal it possesses excellent and certain water power. Its workmen are industrious and intelligent. The most important of its industries are the **cotton manufacture**, which centres mainly in Zürich, and is spread over the surrounding district; the **silk industry** has as its headquarters Bâle, though Zürich and its neighbourhood are also important. In both these occupations a considerable number of people are employed. **Watch making and similar** manufactures, as the production of musical boxes, etc., is carried on in the western districts, Geneva being the important centre.

Its **chief trade** takes place with Germany, France, the United Kingdom, and Italy.

## ITALY

The **climate** of Italy, though hot, is favourable to many kinds of cultivation, the soil is not wanting in fertility, and the inhabitants of the north are industrious. But owing to certain disadvantages it does not hold a fortunate position in agriculture, manufacture, or commerce. The difficulty of growing certain important crops, an unfavourable land system, the former disunion and the present financial straits, are the chief reasons which prevent its development.

**AGRICULTURE.**—In the north and north-east grain is grown with success, though the yield of **wheat** at least has

to be supplemented by large importations (reaching in value £4,000,000 or £5,000,000); but in a great portion of the country the main agriculture consists in the careful cultivation, often in terraces, of small plots in which olives and vines, etc., are grown. The live stock in the country has remained fairly stationary of recent years, save as regards cattle, which show a marked increase (now 5 millions). The mulberry is also largely cultivated, especially in the north. Wine-growing is an industry fairly distributed throughout the country, some of the more valuable kinds being produced in the south.

**MANUFACTURES.** — Like several other southern countries Italy is severely handicapped by its want of coal, which it endeavours to make good by a large and continued import from several sources, and particularly the United Kingdom. (Total coal imports in 1891, £4,000,000). Certain minerals, such as iron, sulphur, etc., it has in considerable quantity.

| Leading Imports. | Leading Exports. |
|---|---|
| **Grain.** | **Silk and silk goods.** |
| **Coal.** | **Wine.** |
| **Raw cotton.** | **Sulphur.** |
| **Raw wool.** | |
| **Manufactures, etc.** | |

The **silk** industry is by far the largest and most important. The exports of silk and silk goods indeed form nearly one-half of the total. It has its home in the north, with a centre at Milan, where goods of various descriptions are produced. The velvets of Genoa rank closely after those of Lyons.

**COMMERCE.**—Italy has many advantages with respect of trade. In foreign trade it has a good sea-coast line with numerous ports, of which three, Genoa, Naples, and Venice, are of very great importance—an importance which will soon show itself when the country is in a sound condition. Its railways, though at present unsatisfactory, would offer good means of internal locomotion on each side of the Apennines. Its advantages, so far as the Mediterranean

trade of Europe is concerned, were vastly increased by the opening of the Suez Canal.

## THE BALKAN PENINSULA

In the countries in the Balkan Peninsula advancement has been prevented by the miserable political conditions which prevailed both in Greece and in the countries subject to Turkish rule. In these latter, while the peasantry were systematically oppressed, no thorough or intelligent attempts were made to develop the resources of the country by such means as a proper system of communication, etc. Hence, despite their fertility, they have made but little progress.

**Roumania, Servia, and Bulgaria** are now practically free from the dominion of the Turk, though the last named of the three is still nominally subject. In them all **agricultural** and pastoral pursuits are the main and nearly the entire occupation of the people. Owing to the fertility of the soil and the genial climate, grain is produced in very large quantities, and serves as a valuable export. This is particularly the case with Roumania, which is becoming one of the largest wheat-exporting countries in Europe. Its total **grain** exports exceeded £6,000,000 in value in 1891.

*Pastoral pursuits* are also important, large flocks of sheep and cattle finding nourishment in the three countries.

Of *mineral wealth* there is supposed to be considerable store, though as yet little has been done in the way of working it or even of ascertaining its amount with precision.

The *Danube* furnishes an important means of communication.

**Turkey in Europe** resembles in natural characteristics the foregoing countries. It, too, exports **grain,** which is produced on its singularly fertile soil. Its pastoral wealth

might be great. The system of communication is exceedingly deficient.

**Greece.**—Till the acquisition of Thessaly, Greece had but little soil fitted for agricultural products. Even now its pastoral pursuits remain its chief occupation. It has, however, valuable products in its *currants* and other southern fruits. Its *wine*, produced in large quantities, is principally retained for home consumption.

## SPAIN AND PORTUGAL

As a country **Spain** presents remarkable inequalities of temperature; and in consequence, partly of that, partly of the differences of soil, of fertility. The most fertile districts are those in *Valencia* and *Catalonia*, where, however, as indeed nearly throughout Spain, agricultural development depends on irrigation works. Of **agricultural products, wheat and barley** are grown most favourably in Leon and the two Castiles; **maize** has a much wider range. On the district bordering the Mediterranean there is a large production of olives and *southern fruits*. But more important than the foregoing is **wine**-growing, for which the leading provinces are Barcelona, Saragossa, Cadiz, Malaga. Of the wine produced the chief part is exported to France for mixing with French wines. Of live stock sheep are the most valuable, but now less so than formerly. The Mediterranean *fisheries* are principally of tunny, sardines, and anchovies.

The **mineral** wealth of Spain is great. In its production of copper, lead, and quicksilver, it excels other European countries. The **copper** is mainly found in Huelva, where are the Rio Tinto mines; the **lead** in Murcia and Jaen; and the **quicksilver** in the mines of Almaden. The two great minerals, **iron** and **coal**, exist,—iron in Murcia, and coal largely in the provinces of Oviedo and Cordova. The latter is but little worked, while the former is mostly sent

away as ore for smelting in South Wales or elsewhere. This is often the case with the other metals. Despite the possession of some coal and the imports from foreign countries, *manufactures* are but little advanced. When they exist, as in the neighbourhood of *Barcelona*, itself the busiest port and commercial town, they are supported by foreign coal. The cotton manufacture is the largest. Wine and mineral ores are the two leading exports.

In **Portugal** the climate is more equable and temperate, and agricultural products similar to those of Spain are cultivated. The *wine* from the district of the Douro is the most important. In mineral possessions it is much poorer and they are but little worked.

## NORWAY, SWEDEN, AND DENMARK

**Norway** and **Sweden** differ considerably in their main occupations. In **Norway** the sea **fisheries** are a main means of employment, the other most important branch being the **timber** production and industry. It produces but little grain. **Sweden** is largely **agricultural**, and has also a large **timber** industry. Both countries, despite all disadvantages, have developed their commerce. Norway has a most important mercantile fleet, while, owing to its narrowness and the situation of its population in the coast district, it requires but little means of internal navigation. In the south of Sweden railways and canals are well developed. The leading commercial cities and ports are in Sweden, Stockholm and Gothenberg, in Norway, Christiania. The chief exports from Norway are fish and timber; from Sweden, timber, butter, and oats.

Norway takes an active part in the cod and herring fisheries in the North Sea. Its timber district is small and somewhat inland. In Sweden agriculture and pastoral pursuits are carried on almost altogether in the south,

where they occupy a large portion of the population. The principal forests are in the north.

Both of the countries, but more particularly Norway, **import grain** (in the case of Sweden, wheat and rye), and manufactured goods and **coal.** Though they possess deposits of certain metals (Sweden, iron), they are poor in coal, and this want, and climatic and other disadvantages, have put an obstacle in the way of manufacturing development.

**Denmark** is principally an **agricultural** and **cattle-breeding** country. In grain it produces on an average sufficient crops for the home consumption. It imports, however, a good deal of rye. Cattle-farming is its chief wealth, furnishing it with its most valuable exports in animals, meat, and **butter.** Its capital and main port is Copenhagen, which, owing to its position, is of considerable commercial importance. Its trade is carried on principally with the United Kingdom and Germany.

## RUSSIA

**Russia** can be described as one great plain stretching away from the Ural Mountains to the European boundaries. On the other side of the mountains lie the Asiatic possessions. Despite this comparative openness a very large portion of Russian soil is entirely unfit for cultivation by reason of its marshy and rocky nature. In addition a great portion is covered by vast forests, which provide the country with its stores of timber, and another large portion consists of the Steppes, which skirt the Black and Caspian Seas, and which, rich with grass in the spring, are burnt up and arid in the summer. Only about one-fifth of the total area is under cultivation. Russia possesses a good many important *rivers*, which would be more useful for *navigation* were they not ice-bound during a large portion of the winter. Among the more important are the Petchora and Northern Dwina, the former flowing into the Arctic,

the latter into the White Sea; the Volga and Ural Rivers entering the Caspian; the Don, Dnieper, and Dniester, flowing, the first into the Sea of Azof, the two latter into the Black Sea, and falling ultimately into the Baltic, the Vistula, and, by St. Petersburg, the Neva.

Though mining and manufacture have some importance, the main occupation of the country is agricultural.

**AGRICULTURE AND ANIMAL WEALTH.**—**Rye,** which is the great food-stuff of the country, is cultivated widely and to a very great extent, but **wheat,** grown principally for export, finds its chief place of growth in the famed black earth plain which sweeps from the Urals to the Carpathians. This soil is so rich that in several parts cultivation has gone on for many years without any use of manure. For cereals the climate, with its long severe winters and its hot summers, is not unfavourable. Where slightly less severe, as in the southern district, where the black earth plain lies, it is extremely advantageous. North Caucasus is a very important wheat province. Unfortunately the methods of cultivation continue to be somewhat primitive. Of other products **flax** is grown in the north-west and the west, **hemp** in the central districts, and **beetroot** for sugar production in Little Russia. The climate of the Crimea and the most southern districts is so warm and genial that vines are cultivated with success. The chief timber districts are in the north and east, and in Poland.

So far as numbers are concerned, Russia excels in its **live stock,** having great quantities of cattle (especially on the Steppes), and sheep. But in both cases they are mostly of inferior quality. The best cattle are in the Baltic provinces; the best sheep in the south.

**Fishing** takes place on the rivers and on the greater part of the coasts, but the most valuable fisheries are those of the Caspian Sea and in the White Sea, and off the Norwegian coast.

**COMMERCE.**—Russia has, as compared with many other European countries, a fairly long coast-line, but not one on the open sea. It has several good busy **ports,** among which the following are prominent:—St. Petersburg

and Riga, in the Baltic, both exporting hemp, tallow, grain, flax, timber, etc.; and in the south the great wheat port Odessa, and Taganrog, which also exports grain and oil-seeds, etc. Baku, on the Caspian, is largely devoted to the export of petroleum. Mutual communication is carried on by means of the rivers, which, when not bound by ice, are busy with heavy traffic, as, for instance, timber, and railways, which are best developed in the south-western portion of the empire and between the Baltic provinces and the great grain districts in the south. On its European frontier its principal import is raw cotton, and its principal exports are **grain** (worth about half its exports), flax, timber, sugar, oil-seeds, hemp, petroleum.

**MINING AND MANUFACTURES.**—The **mineral** wealth is great, and will probably be a source of great future prosperity. In the central district of the Urals are found most important metals, including *gold;* **iron** is also there in abundance. The main production of **coal** takes place in the district round Moscow, and in the Donetz basin, where there are also iron-fields.

**Manufactures,** which are still somewhat primitive, take place chiefly in the provinces of Moscow, St. Petersburg, and Kieff. Among the more important are *cotton* and other textile fabrics, and *sugar refining.*

# AMERICA

## DOMINION OF CANADA AND NEWFOUNDLAND

The Dominion of **Canada** is an enormous territory, comprising the whole of the northern half of North America, with the exception of Alaska, which belongs to the United States, and Newfoundland, with its dependency Labrador. Its provinces are Ontario, Quebec, Nova Scotia, New Brunswick, British Columbia, Prince Edward Island, and

the North-West Territories. In consequence of its position it has **access to the sea** on two different sides. It may be divided into several districts with different characteristics. In the east are the eastern states, which are the most forward and most developed; among these must be included the southern portions of Ontario and Quebec. From thence to the Rocky Mountains extend the great central plateaux of Canada, thickly wooded in many parts, and in other parts offering rich open lands, left clear by Nature or cleared by man, eminently suitable for wheat. The more easterly of these, covering Manitoba and Assiniboine, are particularly rich. As the Rocky Mountains are approached, the land, which has a higher elevation, becomes suitable rather for grazing than for arable cultivation. Between the Rocky Mountains and the Pacific lies the rich, fertile, and well-watered district of British Columbia.

**AGRICULTURE and Natural Resources.**—For **wheat** growing Canada, and especially the central portion, is well fitted. The richness of the *soil* has already been spoken of. In addition, the climate, with a dry, cold winter, a fairly regular rainfall, and a hot summer, is most favourable. The *principal provinces for wheat* and other grain crops are Ontario and Manitoba, but in Quebec, New Brunswick, and elsewhere, a good quantity is produced. The home consumption is high, and despite the fact that about half the population are engaged in, or dependent upon farming, the average net exports of grain are not very large. The largest *export* is that of *barley*. **Stock farming** is rising into importance, both **cattle and sheep** being exported in increasingly large quantities to the United States and the United Kingdom. Another proof of their growth is the large annual export of *cheese and butter*. In the North-West Territories, particularly in Alberta, horse-breeding promises to be of importance.

There are two great industries connected with the natural resources of Canada which require particular mention because of their importance and size.

**Lumbering and the timber trade** have been, and still are, a source of much wealth. They prevail in all the pro-

vinces, with the exception of Prince Edward Island and the North-West Territories, but especially in Ontario, Quebec, and British Columbia.

**The sea fisheries** are situated off the coasts of Nova Scotia, New Brunswick, Prince Edward Island, Quebec, and, in the Pacific, British Columbia. In the Atlantic the catch of cod, herring, mackerel, and haddock is very valuable, while from the rivers of British Columbia comes a large yield of salmon. The river and fresh-water fisheries are indeed very valuable.

**COMMERCE.**—The position of Canada gives it a **double sea-coast**, a possession which has become of much greater importance since the construction of the Grand Trunk Railway, and more particularly of the Pacific Railway, provided means of transit from sea to sea. Of **seaports** the most active are—on the Atlantic, Halifax (Nova Scotia), which exports fish, lumber, and coals; Montreal and Quebec on the St. Lawrence; St. John in New Brunswick; on the Pacific, Victoria, in British Columbia, which imports general merchandise, and exports fish, lumber, and coals.

As regards **internal communication** the water system of Canada is very conspicuous; *the St. Lawrence, with the great lakes*, offers a line of communication for over 2000 miles, only one small portion of which is artificial. The Richelieu and Lake Champlain system is also important. Railway communication is good, the *Canadian Pacific*, uniting the two coasts of the country with its long stretch of line, is having important consequences in opening up new districts. Next to it ranks the *Grand Trunk*, which has its lines in the east and south-east, and connects Canada with the United States lines at Chicago and the *Canada Southern*.

By these various channels and outlets Canada carries on a considerable **trade.**

| Leading Imports. | Leading Exports. |
|---|---|
| **Woollen goods.** | **Timber.** |
| **Iron and steel goods.** | **Animal products.** |
| **Sugar.** | **Grain.** |
| **Cotton goods.** | |
| **Coal.** | |

**MINING AND MANUFACTURES.**—Nearly all the **coal** at present produced comes from the provinces of Nova Scotia (including Cape Breton) and British Columbia; but there are large fields unworked, and but imperfectly explored, in the North-West Territories. **Iron** is found mainly in Nova Scotia, where it lies near the coal, and in Ontario. Of other minerals, **gold and petroleum** are the most important.

**Manufactures** are still in a backward condition. Outside those which are concerned with the conversion of wholly rough material into partially manufactured, as flour-mills, saw-mills, etc., those which do exist are mainly in Ontario and Quebec, where there are some cotton and woollen. The leather industries have attained their largest development in the city of Quebec.

The **trade** of Canada is done mainly with the United States and the United Kingdom.

**Newfoundland.**—The trade and interests of this island, which has as its dependency the barren Labrador, are very closely assimilated to those of the Dominion of Canada. The most important employment of its people are the **fishery** and its attendant occupations.

## THE UNITED STATES

The United States lies mainly between latitudes 30° to 45° north, and extends from the Atlantic to the Pacific. On its eastern shores it has singularly *good communication with the sea*, for on the more easterly portion of its south frontier it is bounded by the sea, the Gulf of Mexico, while in the north-east the line of the great lakes (Ontario, Erie, Huron, Michigan, Superior) offers free access to the ocean. From the neighbourhood of the most western of these lakes the Mississippi River runs in an almost due southerly direction to the Gulf of Mexico. Owing to its breadth, and the number and importance of its tributaries (on the

right bank, Missouri, Arkansas, Red River; on the left, Ohio), water communication in this part of the country is good. In the east of the States the various ranges of the Appalachian Mountains run almost parallel to the line of the coast; in the west, the Rocky Mountains, the Sierra Nevada, etc. Between the Mississippi and the Rocky Mountains is the great central and western plain. These main natural features coincide very closely with the leading divisions into which the various states may be grouped. East of the Mississippi are the *New England States* (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), and the *Middle States* (Delaware, Maryland, New Jersey, New York, Pennsylvania, West Virginia) in the north, and in the south the *Southern States* (Louisiana lies chiefly to the west of the Mississippi); between the Mississippi and the Rockies are the *Western States*, with which are included the states through which these mountains run, while farther west come the five *Pacific States* (Arizona, Nevada, California, Oregon, Washington). These divisions are very important. The **New England and Middle States** are chiefly manufacturing, mining, and commercial; the **Southern States** rear a fair quantity of live stock, but are chiefly agricultural, having as their leading crops, not the principal cereals, but such products as cotton, tobacco, etc. Those of the **Western States,** which lie on the great plain, raise the great wheat and maize crops, and pasture the largest numbers of live stock; those in which the mountains fall are important for their mines. The **Pacific States** have rich mines, produce southern crops, and also large crops of the leading cereals. They are very rich.

From this short account it will be seen that the United States have already reached a condition of high development in many directions. Their immense extent affords them a variety of climates, which far exceeds that possessed by any other nation. And when it is remembered that the soil is rich, and that they possess in addition great mineral resources, and are peopled by an active and energetic population, their future seems well assured. Alone among all countries do

they at once manufacture goods, and export large quantities of foodstuffs and raw material.

**AGRICULTURE, etc.**—The *advantages* possessed by the United States for agricultural development are great. With a great variety of climate, allowing of a great variety of productions, it has on the whole a climate temperate and of such a nature as to allow of the successful cultivation of the more valuable cereals and other great crops. The winters are colder and the summers hotter than those experienced in the United Kingdom. The average rainfall is sufficient. The *soil is good*, and the vast tracts of land in the central and central western portion enable the cultivators to raise crops with comparatively light cultivation. This is shown by the low yield to the acre (p. 37). The general tendency of cultivation has been to proceed westward (p. 40), and to resort to new and fresh lands. In the south and west of the central district are the *great cattle plains*. The corn crops are raised partly for home consumption and partly for export. In 1893 the leading **wheat** states were Dakota, Ohio, Indiana, California, Minnesota, and after these come Kansas, Michigan, Pennsylvania, Missouri, and Illinois. **Maize**, the cereal which in the United States bears the title of corn, is grown very extensively and very successfully; the states engaged in its production being, in order of importance, Iowa, Illinois, Missouri, Nebraska, and Kansas. Indiana and Ohio are also very important. In 1893 the total value of the maize crop was some £120,000,000; that of the wheat crop some £40,000,000. **Oats** are also produced in large quantities (in value about £37,000,000 sterling); barley and rye to a much less extent. The hay harvest is of high value, the states most prominent in its production being Iowa, Missouri, Illinois, and Minnesota. It is, however, fairly evenly distributed throughout the entire country. Potatoes are cultivated very largely, chiefly in the more densely-peopled states, as, for instance, New York. Among the other important crops are cotton and tobacco. **Cotton** is produced most largely in Texas, Georgia, and Mississippi, also in Alabama, Arkansas, and South Georgia;

while most of the other Southern States contribute to the annual yield to some extent. Of the total quantity produced, about 65 per cent is exported. In the cultivation of **tobacco,** Kentucky, Virginia, and North Carolina are by far the most important states, while next to them come Tennessee, Pennsylvania, Wisconsin, and Ohio. Of other products *sugar* is grown chiefly in Louisiana, the *vine* in California, *oranges and other southern fruits* in Florida, while *flax and hemp* are grown more in the north. In both the east and the far west, by the Pacific, are large forests, whence the country continues to derive its valuable supply of timber.

Among **live stock** *cattle and sheep* are the most in number and the greatest in value. The western states stand first, for of the 53,000,000 cattle (oxen and cows), 35,000,000 are pastured on the great grassy plains which lie between the Mississippi and the Rockies. Of the 45,000,000 sheep, 27,000,000 are in these states. For oxen the principal states are Texas, Iowa, Kansas, Missouri, Nebraska, New Mexico; for sheep, California, Texas, Ohio, New Mexico, Montana, Oregon. Great numbers of swine (45,000,000) are kept in the United States, and furnish it with one of its valuable exports. They exist in considerable quantities in most of the southern and western states, but to the greatest extent in Iowa, Missouri, Illinois, Texas, and Ohio. Chicago and St. Louis are the centres of the bacon, ham, and pork industries.

The **fisheries** of the United States are of two kinds. There is the fishing in the great lakes and in the rivers, more especially those running into the Pacific (salmon fisheries), which render a fair yearly yield, but which do not compare in importance with the fishing off the banks of Newfoundland. This resembles that which falls to the share of the Canadians, though exceeding it in value.

**MINING AND CONDITIONS OF MANUFACTURE.**—The **mineral** wealth of the United States is enormous, though as yet comparatively little developed. It is particularly rich in those minerals which form the basis of a modern industrial country. **Coal** is worked mainly in

two districts—in the Appalachian ranges, continuing into Pennsylvania, and in the district lying at the head of the Mississippi basin. It is, as yet, in the early stage of development, though during recent years the advance made has been prodigious, the coal output having more than doubled in the last ten years. It now (1892) amounts to 160,000,000 tons. Of this amount 88,000,000 tons are produced in Pennsylvania. This state has always held a very high position. In several of the southern states, and especially in Alabama, *coal mining has increased enormously* during the last decade. The same has been the case in West Virginia. In Illinois, Ohio, and Iowa a good deal of coal is found. Coal is also found in Maryland, Nebraska, Missouri, Tennessee. But the future prospects of coal mining in the United States seem illimitable. Besides whole districts of the Appalachian range, as yet imperfectly worked, the coal-fields of the Rocky Mountains offer a large supply. In Colorado mining is increasing most rapidly. In addition to the force thus provided comes that of the natural gas, found mainly in Western Pennsylvania, round Pittsburg, in North-West Ohio, in Indiana, and in Western New York. **Petroleum** furnishes another great lighting power, the American petroleum fields being among the richest of the world; their only rivals are in the Caspian district of Russia. In the United States petroleum is raised principally in Pennsylvania and New York. In Ohio the yield has been rapidly increasing since 1885.

**Iron** is produced in many states, and in several places in convenient proximity to the coal. Taking the principal states in their order of importance, iron ore is mined chiefly in Michigan, Alabama, Pennsylvania, New York, Minnesota, Wisconsin. But the *main smelting and production of pig-iron* takes place in Pennsylvania, where 3,500,000 tons, or about one-half of the total pig-iron, is turned out. The Lake Superior iron is brought to this state by water, the principal iron ore ports being Esconaba and Ashland. In both Alabama and Ohio iron smelting is carried on to a considerable extent.

Other minerals are found in great quantities. Chief among them are the following—**copper** (3,500,000 tons), in the production of which the United States ranks high among the three copper countries of the world, is produced chiefly in Michigan (nearly 2,500,000 tons), and also in Montana and Arizona. **Lead** is found in the Rocky Mountains, and also in the Mississippi valley, Colorado and Missouri respectively leading the way. **Zinc** is found in various places, largely in Illinois, Wisconsin, Kansas. **Tin** is found to a considerable extent in South Dakota and California, and also in Virginia and Wyoming. In the production of **quicksilver** the United States occupies a very high position, the Californian mines being the chief. Among them is the New Almaden mine, the largest in the world till the discovery of the one at Idria in Austria.

**Gold** is found to the greatest extent in California, and also in Colorado, Nevada, Montana, Dakota, Idaho, while for silver the states of greatest importance are Colorado, Montana, and Nevada.

*Asphalt* comes chiefly from California and Utah. Building stone is contained in many places; granite chiefly on the east coast in New England. Brine pumping for salt is carried on to the largest extent in Michigan, New York, Ohio, and West Virginia.

When the energy, industry, and skill of the American workmen are remembered, it is little wonder that with great mineral wealth the United States has developed its manufactures so rapidly as has been the case.

**COMMERCE.**—On one coast the United States is engaged in a busy trade with the countries of Europe and Africa and some parts of Asia; on the other side with Australia and parts of Asia. Since the opening of the great lines of communication the activity of its various ports has been much increased. The coast-line, particularly on the east, is good, and the **ports** numerous and busy. Of these the principal are: on the Atlantic—New York, now the most active port in the world, doing an immense general export and import trade, exporting raw and partly raw materials and food-stuffs; Boston, exporting raw materials,

woollen and cotton goods, etc.; Philadelphia; New Orleans, the great cotton exporting port; Baltimore; Galveston; Savannah; Portland; Mobile. On the Pacific—San Francisco, exporting gold, silver, copper, wool, etc., and importing manufactures, rice, etc.

The *internal communication* is carried on by means of *navigable rivers*, of which the Mississippi and its tributaries are the most important, and *canals* greatly developed in the neighbourhood of the great lakes, and *railways*. The railway system is gigantic, the total length of lines in operation being over 170,000. In the eastern states the development is high, numerous lines forming a network of communication. Of equal importance are the great trunk lines which now cross the country from east to west. These are now several in number, and offer means of transport from most important districts by very different routes. Chicago and St. Louis are important railway centres for the Pacific traffic.

In one respect the *commerce* of the United States has been restricted by the action of the Government, which, in order to protect certain home industries, has placed heavy customs duties on the import of foreign manufactures. Of recent years the tariff question has been made a party one, with the result, it is true, of occasional modifications; but it may be questioned if the additional uncertainty thus brought about has not of itself had serious effects. Still the wealth of the country is so great and its productions so varied, that interferences, which in other less favoured countries might have most disastrous effects, do little more than check the rate of its progress. They have, however, brought about several crises.

### Trade of the United States.

The trade of the country is great (1893)—

| | |
|---|---|
| Imports . . . . . | £173,000,000. |
| Exports of home produce . . | £166,000,000. |

The principal countries with which it is carried on are the United Kingdom, which takes about half the exports from the United States, and contributes about one-fifth of its imports, Germany, France, the countries of Southern and Central America, and the West Indies.

| Important Imports. | Important Exports. |
|---|---|
| **Sugar.** | **Bread stuffs.** |
| **Coffee.** | **Raw cotton.** |
| **Silk and silk goods.** | **Meat and dairy produce.** |
| **Wool and woollens.** | **Timber.** |
| **Chemicals.** | **Iron goods.** |
| **Cottons.** | |
| **Iron goods.** | |

**Manufacturing Industries.**—A glance at the table of imports and exports shows us that the United States, unlike the United Kingdom, does not export manufactured goods in large quantities, and, unlike countries which are mainly manufacturing, does not rely upon foreign sources for such. This is the case. The manufacturing industries are very highly developed, but as yet the rapid increase of the population keeps pace with their growth, and they are plied mainly for the home consumption.

*Cotton Industry.*—The United States has its raw cotton at home, and all that is necessary is to bring it into the industrial district where there is coal. The chief home of the cotton industries is in the eastern states, and principally in Massachusetts round Lowell, which is often called the American Manchester, and in New Hampshire and Connecticut. Important cotton manufacturing towns are, in Massachusetts, in addition to Lowell, Fall River, Lawrence, New Bedford; in New Hampshire, Manchester; in Maine, Beddeford; and Philadelphia and New York. Cotton manufacture is on the increase in the south and especially in Georgia.

*Woollen Industry.*—The manufacture of woollens is carried on principally in Massachusetts (Lawrence, Lowell), Connecticut, Pennsylvania (Philadelphia), Rhode Island (Providence), and in New York and Manchester. *Carpets*

are largely produced in Massachusetts, Pennsylvania, and New York States, while in the two latter *hosiery* is actively carried on.

The *silk* industry is carried on in the cities of New York, Philadelphia, and Hartford in Connecticut. Boots and shoes in New York, Philadelphia, Haverhill, Brockton, San Francisco, and Cincinnati.

**Iron Industry.**—The iron industry is carried on mainly in Western Pennsylvania, where Pittsburg is the leading iron town. The ore is partly raised in the neighbourhood, partly brought from the rich fields by Lake Superior. In Pittsburg and district there is a most abundant supply of power. The coal-fields are very rich and the natural gas supplements the coal. In Pittsburg metal industries are carried on in nearly all their branches, small iron and steel goods and machinery being alike turned out in great quantities. Iron and steel goods are also produced in New York, Paterson, Baltimore. Machinery, in addition to being manufactured in several of the above cities, is also produced in the industrial centres, as Lowell, Cincinnati, and agricultural machinery largely in the western towns.

For **chemicals** the most important factories are in New York, Pennsylvania, Massachusetts, and New Jersey. The principal *glass-works* are in the Alleghany county of Pennsylvania.

## MEXICO

The large resources which **Mexico** possesses in its **mines** and **soils** are but little developed owing to the backward condition in which the country still is. Its differences of climate are important as they serve to divide the country into districts suitable for different products. The climate grows hotter in the south, but the main differences in temperature are the consequence of a difference in average altitude. Taking both into account Mexico may be separated into three districts—(1) The hot lands bordering the Gulf of Mexico and lying low. In the south their nearness to

the equator increases their heat and renders them well fitted for tropical and semi-tropical productions; (2) the temperate lands which lie much higher at a minimum elevation of 3000 feet; (3) and still farther in the interior the cold lands, reaching back to the high mountain ranges. There is a fair distribution of rain, excessive at times in most parts of the country save the north-west.

The **agricultural** wealth is great. In the hot lands forest products (including wood and cacao) are yielded in great abundance, and there are crops of *rice*, *indigo*, *cotton*, and *tobacco*, the last-named being best cultivated in the vicinity of Vera Cruz. In the more temperate districts, and particularly in the south, a good deal of attention is paid to the cultivation of *maize* and also of *wheat* and *barley*. *Hennequen* is an important cultivation in Yucatan. The *live stock* are numerous, cattle being, however, the most important, and finding their home in the northern part of the country.

As to **commerce** Mexico occupies a most favourable position; but little more can be said. Its ports, of which Vera Cruz on the Atlantic and Acapulco on the Pacific, do not do the business they well might, both in the export of the home productions and in transit trade. It is hoped that recent railway enterprise will produce great effect. The trade, which certainly shows signs of increase, is carried on to the extent of nearly two-thirds with the United States, after which ranks the United Kingdom. Among its chief exports fancy woods, silver, hennequen, etc., and its imports textile goods, metal manufactures, and coal, etc.

**Mining and Manufacture.**—If properly worked its mines would be a great source of wealth. Even now silver, found chiefly in the district of San Luis Potosi, is one of its main products. It has also large stores of copper. Of coal there is very little. Owing to this want, and to the backward condition of the country, manufactures in the European sense can hardly be said to exist.

## CENTRAL AMERICAN STATES

With the exception of **British Honduras**, these are all republics, **Guatemala, Salvador, Honduras, Nicaragua,** and **Costa Rica.**

In *climate* and conditions of production they resemble the southern part of Mexico, for the low-lying land along the coast is unhealthy and extremely fertile. *Tropical* productions are yielded most richly, the most important product being the coffee of Costa Rica, but of fancy and dye-woods, rubber, sugar, and cacao there is a most abundant supply.

The projected canal through Nicaragua, if successfully carried to a conclusion, will no doubt do much to assist the development of these countries out of their present backward condition.

## THE WEST INDIES

With the exception of Hayti, divided into two negro republics, the West Indies are the colonial possessions of the United Kingdom, Spain, France, Holland. Of these the United Kingdom holds by far the most important place, having as its possessions **Jamaica, Trinidad, Barbadoes,** the **Bahamas,** and a great number of smaller islands. Prominent among the colonies of Spain is **Cuba.**

The climate is tropical, though, being moderated by the trade-winds and the constant exposure to the sea breezes, it is in most cases healthy.

For a long time the one valuable product was the **sugar-cane,** the cultivation of which afforded occupation for the inhabitants of nearly all the islands ; but now, owing to the competition of European beetroot sugar, etc., to the want of enterprise of the planters, and the indolence of the emancipated negroes, it is by no means so great a source of wealth as formerly. Jamaica, Trinidad, and Barbadoes, together with other of the islands, still produce large

quantities. Molasses and rum are also very profitable. In addition there have been several attempts made to develop **coffee** plantations, an enterprise which is yearly gaining ground, while spices, arrowroot, forest products, add to the natural wealth of these islands. Trinidad has large deposits of *pitch.*

The island of **Cuba**, with its capital Havana, holds an almost unique position in the **tobacco** trade. It yields some of the finest tobacco in the world, and so famous are its cigars that the title of Havana is often usurped by cigars which come from other quarters. In addition the sugar-cane is widely cultivated in Cuba.

## THE REPUBLICS OF SOUTH AMERICA

In the case of **South America** the **position** and configuration of the country have notable results. It lies with its two sides exposed to the trade-winds, and with a range of mountains, at some places a double, at others even a triple range, running along its base, with a narrow strip of land between them and the sea. The **winds**, striking the coast, and forced upward by the slight neighbouring hills, sweep over the land till they meet the giant chains of the Andes, which drain them of the moisture they bring from the ocean. From the Andes stream the great rivers which are so important to South America. On the other side of the Andes is a plain without much rain, and in some places a desert. In the extreme south is Patagonia.

The **river system** is the most extensive of any continent. As very many of them are navigable their aid in the development of the country is great. **Falling into the sea, in the north** are the following: *In Venezuela*, the Orinoco (navigable for 1000 miles), which, with its tributaries, on the right the Apaure, on the left bank the Caura and others, provides the country with a regular system of communication. *In Brazil* (*a*) the Amazon, two-thirds of which lie in Brazil, and which, with its

tributaries, offers some 6000 miles of communication. Its chief tributaries are, on the left the Ica, Japuré, Nigro, Jamunda; on the right bank the Purus, Madeira, Tapajoz, and Xingu, these two latter being much impeded in their course. (*b*) Araguara and Tocantins, both navigable, but not of great use. (*c*) San Francisco running into the sea at Penedo. **Running south** are, in Brazil, and flowing out through the Argentine, the Paraguay, and Parana; in Uruguay and the Argentine, the Uruguay.

South America consists of *thirteen countries*, of which three—British, French, and Dutch Guiana—are colonies belonging to European countries, and ten—Brazil, Uruguay, Argentine, Paraguay, Chili, Peru, Bolivia, Ecuador, Colombia, Venezuela—are republics. In these latter, with the exception of Brazil, the language of the country is Spanish. In Brazil it is Portuguese.

The most important countries, or groups of countries, are Brazil, the Argentine Republic and Uruguay, Chili, Peru, and Venezuela.

**BRAZIL** is the largest and the leading country in South America. Its main *wealth lies in its natural resources*, which are extremely rich. It has forest products in an abundant degree, and offers also great advantages to the cultivation of certain products. Its climate is varied, and it is divided among the three zones, tropical, sub-tropical, and temperate.

**Agricultural products.** — The chief productions of Brazil are as follows: **Coffee**, the most conspicuous of all, for Brazil supplies about one-half of the total production of the world. It is grown in three districts, the most important of which lies round Rio and San Paulo; the other two being the districts respectively of Bahia and Maranhao with Ceara. **Sugar** is chiefly cultivated near the coast from Bahia to Ceara, but also in the north of Rio. **Cotton** production takes place in the provinces of Bahia and Sergipe, in the province of Parana, and also in Minas Geraes, where some manufacture takes place. **Rubber** comes in large quantities from the valley of the Amazon in the province of Para. **Skins** are exported from the grazing

lands of Rio Grande do Sul, where the German colonists have reared large flocks of cattle. **Tobacco** from various districts, but mainly from Bahia.

**Commerce.** — So far as its commerce is concerned Brazil possesses some good *ports*, the best of which is the fine harbour of Rio; others, which are important, being Santos, Bahia, Pernambuco, and Para. Its *railway development* is as yet slight. The railways are constructed principally for two purposes: Firstly, as auxiliary to the lines of river communication; and, secondly, locally, as the lines running into the country immediately surrounding leading ports, as Rio, Santos, Bahia.

As yet the country is undeveloped, but *the lack of good and easily worked coal* seems to preclude much industrial development.

The main direction of its *commerce* before the disturbances brought about by recent war was towards the United Kingdom, France, and Germany.

**THE ARGENTINE REPUBLIC AND URUGUAY.**— These two countries are very different from Brazil in the nature of their leading occupations and productions. Uruguay finds its main employment in **pastoral** pursuits. These are prominent, too, in the Argentine, where, however, agriculture is also highly developed. In the Argentine the **wheat and maize** crops are very important for home consumption and export, both being most productively cultivated in the provinces of Buenos Ayres and Santa Fé. Cordoba, Tecuman, and Salta have attained a high position in this respect. In Tecuman the cultivation of the sugar-cane has been successfully undertaken. In its **pastoral** pursuits **sheep** hold the first place, the Argentine possessing more sheep than any country, save Australia (p. 196, etc.). By far the largest number of its sheep are in the province of Buenos Ayres. Of cattle there are many, their number being placed at some 18,000,000. They are much reared for the purpose of slaughter at the Saladeros, where their meat and hides are salted. The trade in prepared meats and meat extracts is becoming a large one. The Argentine Republic has good *harbours* both in the rivers and the

estuary of the La Plata (the capital of Buenos Ayres) and on the sea Bahia Blanca. Its communication by *rail* is already good, and much care is taken for its further improvement. Many of the manufactured goods in use, and nearly the whole of its railway plant and machinery, is imported from the United Kingdom, which has a great deal of capital invested in the various Argentine undertakings. In **Uruguay pastoral occupations** are all important, and among them *cattle farming* (6,000,000 cattle) is most prominent, furnishing a great number of the inhabitants with employment either connected with their keeping or with the preparation of their products when slaughtered. At Fray Bentos are the celebrated Liebig works. The country is more undulating and better wooded than is the Argentine. It possesses fair *harbourage* in the neighbourhood of its capital Monte Video, which is the centre of the railway system.

**CHILI** is a long slip of land nowhere broader than 160 miles. In the north is the celebrated desert of Atacama, whence the *nitrates* are brought chiefly through the port of Iquique. In the centre round Valparaiso, and especially to its south, there is a fertile district where wheat is produced. A large amount of *copper* is produced in this district (the capital), and largely exported from Valparaiso, the capital and leading seaport. Coal is also worked in the north. Chili carries on a fairly large trade with European countries, the United Kingdom being by far the most prominent. Unlike most of the other South American states its main wealth consists in the products of its mines. Its most important *exports* are nitre, copper, wheat, tin, silver, and wood. As a natural consequence its future prospects are more equally divided between agriculture, mining, commerce, and manufacture than is the case in either Brazil or the Argentine.

**PERU** is of less comparative importance than the foregoing. Its *agricultural resources* are great, and from the forests in the interior come various products, as rubber and spices, etc. Of late years its sugar production has grown considerably, and together with raw cotton forms an im-

portant part of its exports. Its *mines*, still very rich, are little worked owing largely to their lack of accessibility and the cost of transport.

**BOLIVIA**, in the neighbourhood of Peru, contains the celebrated mines of Potosi. At present the country is very poorly developed.

**PARAGUAY** in the interior between Bolivia, the Argentine, and Brazil, is of no present importance, communication with it is difficult, and as yet it remains crippled from its disastrous war with Brazil.

**ECUADOR AND COLOMBIA** partake of like characteristics. In both the mountain ranges of the Andes are conspicuous features, and in both the cool and healthy tablelands contrast with the hot and moist sea-coast plains. They both yield large quantities of *forest products* which enter conspicuously into their exports. In the mountain regions there is, or is supposed to be, considerable *mineral wealth*, but, as yet, little has been done towards its working. Colombia has some additional importance from its most northerly portion, the *Isthmus of Panama*, across which, and in the neighbourhood of which, a fair amount of trade takes place. Had the Panama Canal been carried to its completion, it would have done a great deal towards the development of the country. The chief *exports* from Colombia: forest products, including timber and dye-woods, Peruvian bark, cocoa and rubber, coffee and cotton.

**VENEZUELA** is the country of the basin of the Orinoco. As such it possesses a highly navigable way for the products of its rich agricultural and forest land. Like the preceding countries it suffers from the supineness of its people, though during recent years more progress has been made. In the most northerly district lie the Andes, where there is much prospect of future mineral wealth, but this northern zone is the one chiefly devoted to agricultural products, amongst which *coffee is very important.* The country round, mainly to the south of the Orinoco, is the district where live stock is pastured, while in the extreme south are the rich forests. In the east as mineral products the gold of Callao and copper are valuable.

**THE GUIANA COLONIES.**—**British Guiana,** with its capital Georgetown on the Demerara, is mainly important for the cultivation of the *sugar*-cane and the export of sugar. **Dutch Guiana** yields sugar, cacao, and coffee, and has been busy in developing its gold-fields. **French Guiana** is a convict settlement and the most unfavourably situated of the Guianas.

# ASIA

## TURKEY IN ASIA, ARABIA, PERSIA

So naturally fertile is the soil of **ASIA MINOR,** and so favourable its climate for **agriculture,** that, despite the unfortunate condition in which it, in common with other Turkish dominions, finds itself, the annual harvests are of great value. **Grain** is grown widely, the cultivation of barley being of particular importance, large quantities entering into trade. Southern fruits are another important product, and raisins from the Levant bear a high value. *Dye-stuffs*, as madder, valonia, etc., *tobacco*, *opium*, *cotton*, are all grown and all capable of much greater development. *Silk* is largely produced. In other departments the country is very backward; its mineral wealth remains undeveloped, and its manufactures have suffered an absolute decline.

The *foreign trade* is almost entirely in the hands of foreigners, the principal port being Smyrna, lying on the Gulf of Smyrna, and joined by railways with the interior.

**ARABIA** carries on a very small trade with the outside world. Of its productions the most noteworthy is **coffee,** which is, however, of small commercial importance. Only a comparatively small portion of Arabia is fertile, large districts in the interior being bare and affording little but scanty pasturage.

**PERSIA** is becoming a country of more importance, owing to the reforms and changes in process of introduction.

There is a large yield of grain, fruits, rice, etc., and in addition certain of the valuable products are carefully cultivated. Opium is a rapidly growing export, and is sent both to the United Kingdom and to China. Silk is a valuable product.

## ASIATIC RUSSIA

The Russian dominions comprise about one-third of Asia. They may be treated of in three divisions:—**Caucasus,** which lies partly in Europe, partly in Asia, **Siberia,** and **Central Asia.** Each of these have their importance.

**CAUCASUS.**—In this large division there are sources of great wealth and prosperity. The North Caucasus is a rich **agricultural** district, the provinces of Kaubau and Stavropol holding a high position for wheat growing. On the whole it is a well-watered region. Its main wealth, however, lies in its **mineral** possessions,—silver, lead, and other metals being found in the ranges of the Caucasus. But more important still is the production of **petroleum,** which takes place in the trans-Caucasian districts lying between the Black and the Caspian Seas. The output is increasing rapidly (*cf.* p. 99). Tiflis, the capital of the district, lies in good communication with the *ports*, the Batoum-Tiflis-Baku Railway passing through. This line has been of great importance for the petroleum export, though in a short time a great deal of the oil will be conveyed to Baku by a pipe. Coal and salt are also found.

**SIBERIA** has districts of very different character. *In the north* the bitter and unfriendly *climate* prevents cultivation, whereas *in the south* there are all the conditions needed for successful agriculture. The main products of the north are timber and furs, and even these have not been successfully developed owing to *lack of good communication.* This want will be very effectually remedied when the great Siberian railway terminating in Vladivostok is completed. But the greatest **wealth** of Siberia lies in the **mines.** From the Urals come gold and copper in large quantities. There are

*most extensive deposits of iron and coal* in the neighbourhood of the Altai Mountains, and this district will, it is supposed, prove one of the richest mining centres in the world.

**The CENTRAL ASIATIC DOMINIONS** are also of high value. Here the main occupations are as yet pastoral and agricultural, cotton, tobacco, and wine being produced among other commodities, but Turkestan is said to possess good coal and iron.

The Russian dominions are, save so far as the *petroleum* of the Caucasus is concerned, rather important for their promise of future wealth than for their present products. At the present every effort is being made to stimulate their industries and commerce. Railways are being extended, roads made, etc.

## BRITISH INDIA AND CEYLON

**INDIA,** which is in shape an irregular triangle extending into the sea, is bounded on its base in the north by lofty mountain ranges known most generally as the Himalayas, though strictly speaking there are several different ranges with distinctive names. This lofty barrier not only has great climatic influences, but it affords the protection of a mountain frontier pregnable only by means of certain and few passes; of these the most important are the Bolan and the Khyber passes.

The country can be separated into **several well-marked divisions,** each with distinctive characteristics in condition and product. Thus in the north are the **Himalayas** with their many mountain valleys. To the south of this mountainous district lies the **Plain of the Great Rivers,** well watered by the many streams and rivers which take their rise in the mountains. The three great rivers of India proper are the *Indus*, the *Brahmapootra*, and the *Ganges*. In British Burmah is the *Irrawadi*. Both the Indus and the Brahmapootra take their rise in the north side of the mountains. The *Brahmapootra* flowing east and then south passes through Assam and empties itself near the mouth of

the Ganges. The *Indus*, flowing westward and then south, is joined by the five rivers of the Punjab—Jhelum, Chenab, Ravi, Bias, and Sutlej—and flows into the Arabian Sea. The *Ganges*, the great fertiliser of the greater of the plains, has many and important tributaries, while cities of great note are situated on its banks, as Calcutta, Patna, Benares, Allahabad. These rivers with their tributaries present an extensive means of communication and transport. The Indus is navigable for some 900 miles, and receives considerable traffic from its tributaries. The Brahmapootra bears the trade of East Bengal and Assam. The Ganges is navigable in some degree as soon as it reaches the plains, and by light steamer to Cawnpore. Of its tributaries the Jumna, on which are Agra and Delhi, is the greatest. The Plain of the Rivers is divisible into two, that of the Ganges and that of the Indus. It is bounded on the south by the Vindhya and Satpura Mountains.

The next division is the **tableland of India.** It again falls into two plateaux, very closely connected in characteristics and productions—the old kingdom of Malwa and the Deccan. The Deccan is bounded on the north by the ranges separating it from the Great Plain, in the east and west respectively by the Eastern and Western Ghats, and at the southernmost point by the Nilgiri Hills.

Between each range of the Ghats and the sea is a narrow strip of **coast-land.**

**Burmah** consists of four main divisions, the plain of the delta of the Irrawadi, and the valleys respectively of the Irrawadi, Saluen, and the Mekong.

**AGRICULTURE** is the *great employment of the people of British India.* It has been estimated that about three-quarters of the population are dependent directly upon the cultivation, while in all probability nine-tenths are dependent upon it more or less. The *soil* varies very greatly, but taking into account the difference of soil required for the different productions it may be said that it is on the whole rich and fertile. It varies from the light sands of Scinde, the delta swamps and the stony clays of the Punjab, to the black cotton soil of the Deccan. The *climate*, however, in point

of moisture is by no means so propitious. The rains are heavy but uncertain. The north-west monsoon blowing across India deposits some of its moisture on the west side of the Western Ghat, but sweeps in the main over the Great Plain to the Himalayas. Thus the rainfall is most constant and assured in Assam and Lower Burmah, in the deltas of the Bay of Bengal. This irregularity and uncertainty in the rainfall which was a cause of famine, would still occasion disaster and be a great drawback to the welfare of the country were it not for the *system of irrigation.* Here Government action, by the construction of irrigation canals, has supplemented native efforts. How necessary irrigation is is shown by the large proportion of land under irrigation to the total cultivated in certain districts, as for instance in Scinde, and in the next degree in the North-West Provinces, Punjab, and Madras. The main efforts of the people are directed to the cultivation of the three great **food-stuffs**—millets, rice, and wheat. **Millets** are on the whole the staple food-stuff of India, being grown in nearly every province, but most largely in Bombay, Scinde, Mysore, Madras. They are grown even in the good wheat provinces, as the Central Provinces, the North-West Provinces, and the Punjab. **Rice,** on the other hand, requiring as it does very particular condition (much moisture), is a very local crop, though where grown it is most important, and forms the food of the surrounding population. Probably one-third of the people are rice-eating. It is grown most advantageously in the valley of the Ganges, where it nourishes a dense population. In Bengal and Assam the proportion of rice-eating people to the total population is high. On the other hand rice is *very little* cultivated in Bombay, Punjab, and North-West Provinces. It is grown in Madras. Rice for export is chiefly produced in and about the delta of the Irrawadi. **Wheat** as a rule grows in the provinces or parts of provinces where rice does not. Thus the provinces where it has assumed the greatest importance as a crop are the North-West Provinces, Behar, Punjab, Central Provinces, and West Bengal. It is a very important export. Of other agricultural productions the most

important are: **cotton,** grown on the black cotton soil of the Deccan, in Behar, and in Madras in the district round Bellary; **jute,** the cultivation of which is mainly confined to North and East Bengal; **indigo,** chiefly grown in Behar, North-East Madras, and Punjab; **opium,** in the Ganges valley round Patna and Benares, and in the old kingdom of Malwa. **Coffee** is grown on the slopes of the Nilgiri Hills and in Mysore, **tea** mainly in Assam. Oil-seeds are a large product, mainly in Bengal. In Burmah there is a considerable production of rice, in addition to which forest products (spices and gums, etc.) are valuable. In **Ceylon** the coffee plantations are yielding to **tea,** the cultivation of which is assuming comparatively large proportions. Teak is a valuable product in Burmah.

The **live stock,** though moderately numerous and yielding an export in the form of hides, are usually of a poor quality. *Cattle* are reared with results somewhat better than elsewhere in North-West Provinces, Punjab, Oudh, Central Provinces, Madras, and some parts of Bombay. *Sheep* are not a source of great profit. The greatest number are in Madras.

**COMMERCE.**—The commerce of India is great. In addition to its own trade, which is large, a certain amount of transit trade passes through some of her ports, in particular through Calcutta, between Europe and the Straits Settlements, Malay Archipelago, etc. Of her ports, the chief are—Bombay, *importing* coal, iron, textiles, etc., and *exporting* wheat, oil-seeds, opium, etc.; Calcutta, *importing* salt, coal, iron, textiles, etc., and *exporting* cotton, rice, dyestuffs, oil-seeds, etc.; Kurachi, *importing* metals, etc., and *exporting* salt, rice, hides, etc. Other ports are—Madras, Chittagong, Coconada, Tuticorin.

**Internal communication** is to some extent provided by rivers and canals so far as the Plain of the Rivers is concerned. Some of the latter serve the twofold objects of navigation and irrigation. The *railways* have been laid down with the aim of extending trade, and of facilitating military defence. A good example of this is offered by the *Bengal Najpur* and *Najpur Bombay* (Great Indian Peninsula) lines, which pass through a very rich wheat district,

join the two chief commercial cities, and will be of great military use. Other lines are the East Indian, from Calcutta to Delhi, the Eastern Bengal, the Northern Bengal, Madras line, communicating by its main line with the Grand Indian Peninsula. These, however, are but a few of the lines, for the activity of the State, together with private enterprise, has stimulated a high development of the means of communication.

**The Trade of British India** is very great. The foreign trade by land has been reckoned at about £8,000,000 in value, of which a large portion is with Nepal. But it sinks into insignificance by the side of the sea-borne trade, which, reckoned in tens of rupees, is in value 170,000,000.

| Leading Imports. | Leading Exports. |
|---|---|
| **Cotton goods.** | **Grain and pulse.** |
| **Metal and metal goods.** | **Raw cotton.** |
| **Machinery and railway plant.** | **Opium.** |
| | **Oil-seeds.** |
| | **Cotton goods and yarn.** |
| | **Raw jute.** |
| | **Tea.** |

**MINING AND MANUFACTURES.**—The **coal** production of India takes place mainly in the district of Raniganj, some little distance from Calcutta. The working of these pits has been developed of recent years. In addition some coal for railway purposes is raised in the Central Provinces. Elsewhere coal, if worked at all, is worked on a very small scale; although it is estimated that the area of deposits in India is large, it is impossible to speak with any amount of assurance. Coal to the value of over £1,000,000 is imported, for both Bombay and Madras have to be supplied with English coal. **Iron** exists in large amounts and in good quality, but its production is hindered by lack of coal, or by the poor quality of the native coal where such can be obtained. Of other metals, **copper and lead** are found chiefly in the Himalayas, **tin** mainly in Burmah. **Petroleum** is also found in Burmah and in Assam. **Salt** is

obtained both by evaporation and by mining in the wonderful salt hills of the Punjab.

Despite the want of good fuel, one main branch of manufacture has grown to considerable proportions. In the neighbourhood of Bombay the large home yield of raw **cotton** has been used for starting **home manufactures** at first of *yarn*, and latterly also of *piece goods*. These are used for home consumption, and also exported to the further east (as China), where British India is proving a serious rival to the United Kingdom so far as yarns and certain classes of goods are concerned.

Of the foreign trade of British India, more than one-half is carried on with the United Kingdom; the next most important country being China, with nearly one-eighth.

## FURTHER INDIA AND THE MALAY ARCHIPELAGO

Beyond Burmah, now wholly an English possession, lie several other countries. In the Indo-Chinese peninsula there are **Siam**, Lower Siam running down the Malay Peninsula, the French colony of **Cochin China**, and certain other states, some of which are in a position of dependence upon France. The climate of these countries is tropical, and their products those which might be expected from countries lying in such a position and as yet in a backward condition. **Rice** is produced very largely, furnishing at once the staple food of the country and an important export. Forest products, as teak, indigo, etc., are found in considerable amounts and exported; in the case of Siam chiefly from Bangkok, the capital, on the river Menam; in the case of Cochin-China, from Saigon.

Of much greater importance for commerce are **The Straits Settlements**, belonging to the United Kingdom, and situated on the western side and to the south of the Malay Peninsula. Penang, Wellesley Province, and

Malacca contribute certain products, as tapioca, but the great importance lies in the commercial activity of **Singapore**, which lies on an island of that name at the very south of the peninsula. It is a busy emporium and port of transit. It holds a **central position** between British India and the far East, and goods passing from this latter quarter to the former, or to Europe, pass through Singapore, forming as it were a steady, endless stream. At Singapore are collected for despatch the miscellaneous products of the neighbouring regions and the Malay Archipelago.

**The Malay Archipelago** is the title given to the many islands lying south-eastward of the Asiatic continent. The more important of them are *Borneo*, *Sumatra*, *Celebes*, *Java* (all, with exception of part of Borneo, belonging to Holland), the *Philippines* (Spanish), *Moluccas* (Dutch). Part of Borneo is British. The Dutch East Indies produce large quantities of tropical articles for the European markets. From **Java**, the most forward, comes **coffee**, of great value, and **sugar**, this latter being especially important in its trade with the United Kingdom. The islands of Banca and Billiton, off the coast of Sumatra, export **tin** from their rich mines. From the **Moluccas** come important **spices**. In **Borneo** there is a good store of mineral products in addition to other sources of wealth. The **Philippines** yield hemp, sugar, rice, coffee, and, in particular, tobacco, exported mainly from Manilla.

## CHINA

The empire of **China**, vast though its area and great though its population (400,000,000), does not hold a commercial or industrial position at all commensurate with its size. This largely arises from the rigidness with which it has resisted the habits and customs of other nations, and from the fact that in most parts of the kingdom the sole occupation is a backward agriculture.

**Agriculture** is, indeed, the main employment. In the more northerly districts wheat and millets are grown, but in the south, where the population is densest, *rice* is the chief crop and the staple food. It is grown for home consumption and not for export. There are, however, two products which have an importance for China in the markets of other countries—silk and tea. **Silk** is produced widely, as the range of the mulberry tree in China is wide; but the best comes from the provinces of Kuangtung and Che-Chiang. **Tea** was once almost a monopoly product of China, which even now, though deprived of certain markets by the competition of Indian tea, is the most important tea-producing country. The production of tea takes place in the south-western provinces. Much of the soil of China is rich and fertile, but none more so than the great yellow-earth plain through which the Hoang-ho finds its way to the sea.

In **mining wealth** China is rich, though as yet but little has been done to develop its stores of *coal*, believed to be enormous, and of other minerals. The industries plied are chiefly hand industries, and mostly of a distinctively Eastern nature, including ivory carving, lacquer, and the manufacture of earthenware (china) of a very delicate kind.

For **commerce** China possesses the advantage of a *good system of internal water communication.* Its four great rivers—the Yang-tsi-kiang, Hoang-ho, Si-kiang, and the Pei-ho—are all navigable, and by means of tributaries and canals afford a means of transport, etc., throughout the country. Foreign commerce, long discouraged, is now carried on through the *treaty ports*, of which the chief are, Shanghai, Canton, Foochow, Hankow, Amoy, Swatow, Pakhoi.

| Leading Imports. | Leading Exports. |
|---|---|
| **Cotton goods.** | **Silk.** |
| **Opium.** | **Tea.** |
| **Metal goods.** | |

Of its trade, by far the largest amount is carried on

with the United Kingdom and the British Colonies, especially India.

**Hong-Kong**, of much importance to the United Kingdom in its China trade, lies at the mouth of the Canton River.

## JAPAN

In striking contrast with China, **Japan** has been of recent years singularly open to foreign influences. It has aimed at reconstructing its life, both social and industrial, on European models, and has introduced important changes in very many directions. But the effect of these is, of course, restricted to a limited area; and the greater part of the islands still remains dependent on agricultural pursuits. The climate is temperate and the natural features varied.

In **agriculture** the most important crop is that of rice, after which come rye, barley, and wheat. Both sugar and tea are objects of careful cultivation, the latter forming a valuable export. Cattle and horses are the principal live stock. The *fisheries* off the coast yield a considerable supply of food, and employ a great number of people. Attempts have been and are being made to develop the **mining** resources of the country. *Coal* is actively mined, but as yet little progress has been made in the production of iron. Owing to the possession of coal, and the new enterprise in the country, branches of European industry are being introduced, chief among them being the manufacture of cotton yarn. *Silk* and other textiles are also produced.

The **internal commerce** is carried on by means of roads and railways, which are being rapidly extended. Most of the foreign trade passes through Yokohama, about one-fourth being with the United Kingdom. The *chief imports* are **cotton goods, sugar, woollens, metals,** and the *chief exports* **raw silk, silk goods, tea.**

# AFRICA

## ALGERIA, TUNIS, MOROCCO

On the south-west shores of the Mediterranean are three states whose development, mainly agricultural, has proved of some considerable value to the trade and industry of the world.

**ALGERIA,** which is the most important of these, is the most prominent of the dependencies belonging to France. It is regarded rather as a detached province than as a colony. The advantages it possesses consist in its *beautiful climate and its fertile soil.* Despite these, it is only of recent years that it has made much progress. At present it is chiefly **agricultural.** Regular cultivation is, however, confined to the tracts lying between the Greater Atlas and the sea, and even in this district there is much desert and barren land. In the neighbourhood of the Lesser Atlas, and in many parts of the coast plain, large crops of **wheat** and **barley** are raised, which form a large item in the exports into France. Southern fruits, and especially the vine and the olive, are cultivated with success. An important product and export is **esparto grass,** which grows with very little trouble, and is sent largely to England for the paper industry. Flax and vines are valuable. The live stock is large for the size of the country—sheep, which furnish very good wool, being the most conspicuous.

As yet, **mining** is but little developed. The most important mineral produced in any quantity is **iron.** Owing to the position it holds in the neighbourhood of France, and to its want of coal, it is not likely that manufactures will become of much importance.

The **trade** is carried on chiefly through Algiers, which is a good port, and has the best railway communication

with the interior of the country. *The main commerce is with France, to which country go more than four-fifths of its exports*, the chief articles being grain, wines, animals, wool, etc. From France it receives about a like proportion of its imports, most being in the shape of manufactured goods. Its most important exports to the United Kingdom are esparto and other paper-making fibres.

**TUNIS** is a French protectorate. Though not so highly developed as the foregoing country it is naturally more fertile, raising and exporting *grain and olive oil.* Like Algeria it sends esparto grass to the United Kingdom. The capital is Tunis, which is the principal commercial centre, and is connected by railway with the port, Goletta.

**MOROCCO.**—The nature of the development of Morocco is very similar to that of the two foregoing countries, the leading exports being beans, barley, and wool. Though there are supposed to be stores of minerals, mining has not been developed, and manufactures, in the European sense of the word, do not exist. Of the foreign trade, which is mainly conducted through Tangier and Mogador, the greater portion is with the United Kingdom.

## EGYPT

Of all the countries in the north of Africa **Egypt** is the one of the greatest importance. Since its administration by English advisers its prosperity has greatly increased, and though nominally a Turkish dependency, *the predominant and active influence is English.*

**Agriculture** is the great mainstay of the people, some 70 per cent of the total population being directly engaged in it. But the district in which cultivation is possible is but a small part of the whole area. To the statement that Egypt has two features, the Desert and the Nile, it must be added that it is only in the neighbourhood and by the assistance of the latter that agriculture of any importance is

possible. *The best agricultural districts are the Nile delta in Lower Egypt, and the land close to the stream in Upper Egypt.* The importance of the Nile is twofold: firstly, it gives the moisture which is needed, and which the land derives not from rainfalls, but from the rising of the river, which is due to the rains more than a thousand miles away; secondly, it brings fertilising ingredients which it mixes with the light sandy soil over which it pours its flood. To increase the agricultural cultivation of Egypt means to improve and develop the irrigation of the country, to make the water supply more continuous, and to prevent great flooding, which would destroy certain of its crops, *e.g. cotton and sugar*, as it occurs just at the season when these would be in growth.

The crops which occupy most space are **wheat** and **maize**, both of which are yielded abundantly. After these come clover, **cotton**, beans, barley, etc. Rice is grown, as also the sugar-cane, to a considerable extent. **Cotton** and **sugar** are particularly favoured by the warm dry climate, together with the artificial moisture which is supplied to them according to their requirements. Cotton, grain, and sugar are the most important products for the trade of the country, raw cotton forming nearly three-fourths of the total exports, *i.e.* about £9,000,000 out of some £14,500,000. In addition the export of cotton seed bears a value of about £1,500,000. The cotton and sugar harvests are in October and November. With the improvements which are being made, it is probable that the position which Egypt holds in the cotton market will be considerably improved. Tobacco may become an important product.

The internal **trade** of the country takes place partly by means of the Nile, which at some seasons of the year offers a very good navigable channel, and partly over the railways which have been extended (about 1250 miles), and the activity of which has increased greatly of recent years. Most of the foreign trade passes through Alexandria, which is a very busy port, exporting corn, cotton, wool, and rice, and importing cotton and other textile goods, timber, coal, and hardware. Of the trade by far the larger share

is carried on with the United Kingdom, which takes about three-fourths of the exports, and contributes nearly two-fifths of the imports.

There is *no mining development* in Egypt, and manufactures, with the exception of the few of local importance, can hardly be said to exist.

The **Suez Canal,** which connects the Red Sea with the Mediterranean, is a feature of great importance both in the history of Egypt and in the growth of the Mediterranean countries. Since its opening in 1869 there has been a steady and latterly a rapid growth in the traffic. *Nearly four-fifths of the tonnage passing through the canal are British.* It has thus largely facilitated the commerce of this country and of Europe with India, Australia, and in general with the East. In addition it has conferred much benefit on the countries bordering on the Mediterranean, and led to an increase of the commerce entering the Italian and French Mediterranean ports. Lastly, it has not been without salutary results on the industry and commerce of Egypt, which has thus been provided with a position on one of the great highways of trade.

## SOUTH AFRICA

The main, and by far the most important countries in South Africa are those belonging to the United Kingdom. In addition to these there are the two Dutch Republics of the Orange Free State and the Transvaal, the undeveloped territories belonging to Germany on the west, and to Portugal on the east.

### BRITISH SOUTH AFRICA

The British domains comprise the **Cape Colony,** much the most valuable possession in South Africa, the colony of

**Natal,** and the large territories of British Bechuanaland, etc., which stretch far into the interior, and as yet yield but little, though offering undoubted promise of future development.

**The CAPE COLONY and NATAL.**—The land of these colonies falls into three divisions: The *coast-land* sloping down to the sea with a warm and often a moist climate; in Natal this part is almost tropical in its development. Beyond comes the *middle district*, with a much more exhilarating, and, on the whole, a dry climate, gradually rising in height. Lastly, the *high inland district*, known in the case of the Cape as the Karoo, where the air is excessively dry, and the rainfall very scarce and intermittent. It is by far the largest of the three divisions, and is of great pastoral importance.

The **agricultural** development of the country varies with the characteristics of the divisions just enumerated. In the coast-lands, and in the lower midlands of the Cape Colony, grain crops are raised and vines cultivated. The **grain** production in Natal takes place chiefly in the midlands, for there the climate of the coast-lands is much hotter, and the soil being suitable, there is a fairly successful cultivation of sugar, cotton, etc. Cereals are cultivated in the districts spoken of with considerable success, large quantities of wheat, barley, maize, oats, etc., being yielded. Fruit-trees needing a southern climate flourish, and there is a good yield of tobacco. **Wine** is a product of very considerable value. Its production is conducted under the most favourable conditions in the province of Constantia, and in the districts near to it, and it is probable that in the future wine-making will grow to be an important industry. In 1890 over 4,000,000 gallons were produced. The wines are exported as yet to only a small extent. The staple occupation of the countries is not arable agriculture but sheep-farming. The Karoo consists of dry plains, at times very bare, but covered with rich grass after rain. In the Cape Colony there are nearly 17,000,000 sheep which yield wool of a very high quality. Natal possesses about 1,000,000 sheep. In addition there are a great quantity of Angora

and other hair-yielding goats, the number in the Cape exceeding 5,000,000. Cattle and horses are pastured to a less extent. A branch of live stock of importance is the ostrich. Ostrich-farming at one time was one of the most important industries. At the present it is far below sheep-farming in value, the export of feathers having declined to about £500,000.

**Mining and Manufactures.**—**Coal** is best worked in Natal, in the district of Newcastle, whence it is brought to Durban; but there are good beds in various parts of this colony, and the general output is rapidly increasing. There is a small yield of coal at Cape Colony. Copper is found in abundance in Namaqualand, and, owing to the lack of fuel in the Cape Colony itself, is largely shipped to South Wales for smelting. The **diamond** fields of Kimberley have attracted a large number of settlers, and the diamonds enter largely into the exports. As yet manufactures are in a backward condition, owing partly to a want of convenient fuel, but more perhaps to the great profits offered in other directions. Those which exist are chiefly connected with the preparation of raw material, as tanneries, breweries, flour mills, etc.

**Trade.**—The trade of these colonies is increased by the goods which pass through them to and from the Dutch Republic and the British possessions in the interior. The mining and pastoral industries of both the Orange Free State and the Transvaal have had a stimulating influence; more important still have been the results of the *gold mining* in the latter country near Johannesburg. The *internal means of communication* till recently were very poor, and even now they require much development before transport can be reckoned even fairly easy and cheap. The principal railways start from the coast from Cape Town, Port Elizabeth, East London, and in the case of Natal, from Durban. From Cape Town to the north (in connection also with the lines from Port Elizabeth and East London), runs the Northern line, extending through the Orange Free State into the Transvaal. The foreign trade takes place through the seaports already mentioned.

*Leading Imports and Exports of Cape Colony and Natal.*

| Imports. | Exports. |
|---|---|
| **Textile fabrics.** | **Diamonds.** |
| **Leather goods.** | **Wool.** |
| **Iron and Machinery.** | **Ostrich feathers.** |
| | **Hides.** |
| | **Goats' hair.** |

Of the trade, by far the largest amount is carried on with the United Kingdom. In the case of the Cape the home country nearly monopolises the wool, hair, and animal exports.

# AUSTRALASIA

## AUSTRALIA

The Australian continent is a solid, somewhat unshapely mass, with slightly indented coast-lines, having on the one side the Indian, on the other—the east—the Pacific Ocean. A particular feature of the east coast is the *Great Barrier Reef*, which for over 1000 miles runs parallel at some 50 miles distance from the coast. The main and best known mountain ranges are situated in the south-east portion of the continent, lying at some distance from the coast, and forming a massive and irregular curve, which corresponds more or less with its outline. In Victoria, the Grampians and the Pyrenees run south to north: east to west is the Dividing Range. The Australian Alps lie just within the borders of New South Wales. *This great mass of high land, with its different ranges, is the main watershed*, and facing as it does to a certain extent the moisture-laden south-west trade wind, performs a most important function. From it flow the rivers. The land lying between it and the coast is on the

whole the best watered, and it is in this district that the greatest progress has been as yet achieved. The rivers are short and fairly rapid, though many of them are important and navigable. On the west and north-west the land slopes gradually to the interior through long plains, the most important of which are the Darling Downs. The most important rivers of the whole continent, the *Darling* and the *Murray*, flow through these plains, and finally joining, find their way into the sea in South Australia, a little to the east of Adelaide. These rivers are important both for navigation and for irrigation, which is now beginning to be systematically extended through the interior district of Victoria. The real interior of the continent is very rainless, and offers but little opportunity for cultivation. That takes place in those colonies, or in those parts of the colonies which are, though not necessarily on the coast, still far from the central regions.

**NEW SOUTH WALES**, the oldest and the wealthiest of the Australian colonies, lies on the east, having Victoria on its southern and Queensland on its northern frontier. Its natural resources are very great.

**Agriculture and Live Stock.**—Till quite recently little attention in this department was given to anything but sheep-farming and the production of **wool**. The number of sheep exceeds 50,000,000, and the yearly clip of wool is very heavy. Owing to the climate and the care exercised, it holds the best position in the market as regards quality. More recently wheat-growing has been extended with great success, for the rich soils of the valleys of the Murray, Murrumbidgee, and Lachlan offer great advantages. The one obstacle, which must be met by irrigation, is the want of moisture. The country round the Hunter River is well watered. The district of Illawarra is agriculturally rich. Maize is widely cultivated. In the north of the colony sugar is produced, and in the south, chiefly near Albany, wine is most important; their production can be largely increased. In the Illawarra province and in the district near the Hunter River dairy farming is being extended.

**Commerce.**—There are several fine harbours on the

coast of New South Wales. At present the *most forward seaports* are Sydney, which, with its unsurpassed harbour, does an enormous trade, its leading exports being wool, tallow, and hides; Newcastle, which is at the mouth of the Hunter River, and exports coal and agricultural produce. *The internal communication* by road and river is good, and the railways run from Sydney in the three main directions; south to Albany, thus effecting communication with Victoria, north *viâ* Newcastle to meet the Queensland lines, and into the interior.

**Mining and Manufacture.**—To its agricultural wealth and busy commerce New South Wales adds the possession of the more important minerals and of gold. **Coal** is well worked in the country lying inland from Newcastle (round Maitland), and in the Illawarra district, while the deposits of iron in this latter part are rich. It is also found elsewhere. **Copper** and lead are also found. The main **goldfields** are round Bathurst, but their yield has declined during recent years. Manufacture is as yet little developed, owing to the comparative ease with which imports could be procured from the United Kingdom. But it is extending.

The chief trade (about one-half) is done with the United Kingdom, which practically receives all the Australian wool.

**VICTORIA**, the smallest of all the five colonies, was for some time the wealthiest, owing to its great discoveries of gold, and the industries which it called into activity. In **agriculture** and pastoral pursuits it occupies a high position, though its production of wool is far under that of New South Wales. It grows good wheat, in quantity more than sufficient for the home consumption. Now that attention is being paid to irrigation, it seems probable that the northern portion of the colony will become highly suitable for a variety of products.

In **commercial** importance Victoria ranks high, holding a position only a little lower than that of New South Wales. Its active ports are on Port Phillip Bay, where Geelong is situated, in addition to Williamstown and Port Melbourne, the two outlets of the capital. Melbourne itself is accessible

to vessels of small enough tonnage to come up the Yarra. Railways are well developed, and radiate from the capital.

**Gold** has been its chief **mining** product, and is still one of the chief staples of the colony. There are two principal districts—Ballarat and Sandhurst. Manufactures are still in their initiatory stage; and, unfortunately for their future, the country is poor in coal and iron.

**SOUTH AUSTRALIA.**—In addition to what may be called South Australia proper, there is attached to this colony the immense arid central and northern tracts through which the great telegraph line passes. They contribute nothing to the wealth of the colony, which, like that of all the other colonies, consists largely of wool. South Australia, however, has two distinctive and valuable products. In the plains of Adelaide **wheat** of an excellent quality is raised, while the **copper mines** (the best are at Barra Barra and Wallaroo) furnish a fairly important export. The colony is but little developed save in its southern districts. Both climate and soil are favourable to the growth of the vine, and wine is likely to become one of its more profitable products. Port Adelaide is the leading seaport.

**QUEENSLAND**, lying as it does to the north-east, comes partly within the Tropical Zone. It yields **tropical products**, as sugar and maize. But more valuable than these is the **wool** of the sheep pastured on the higher plains of the interior, nowhere with greater success than on the Darling Downs, and the **gold** found mainly in the northern and central gold-fields. Other minerals, including **coal**, though existing in considerable quantities, are as yet but little worked, with the exception of copper. Brisbane is the capital, and it and Rockhampton are the chief seaports.

**WESTERN AUSTRALIA** is the most backward of the continental colonies. Of recent years there has been some advance, owing, firstly, to the attempts to develop the agriculture; and, secondly, to the discoveries of gold. It also possesses large numbers of sheep.

## TASMANIA

This is one of the oldest of the Australian colonies. It is very unlike those on the main continent, possessing a far more temperate climate, and presenting a more mountainous and more variously and richly-wooded surface. Its **agriculture** is also more varied and more European in character. Apart from sheep, which are very important here as elsewhere, it yields large amounts of fruit, and could, it has been reckoned, serve as a magnificent market garden if there were only a large enough market with a large enough demand. **Tin and copper** are produced in the north-west and north-east of the island. Hobart and Launceston are the principal ports.

## NEW ZEALAND

**New Zealand** consists of two islands very different in their main characteristics. The *North Island* is unusually fertile in the north, while in the remainder of the island land highly suitable for cultivation or *pasture* is interspersed among the luxuriant woodlands. Its climate is warm and exhilarating, though in winter, more especially in the extreme north, it is wet. The South Island is more mountainous, having parallel with its west coast the magnificent range of Southern Alps. Thence the land slopes gradually down to the eastern shores. The winter is cold, but the climate drier than in the North Island. Its resources are very varied. **Sheep** are a great source of wealth, providing it with exports of **wool** and of frozen mutton. In agriculture it excels. Its **wheat** is exceedingly good, especially so in the North Island, where the soil, rich with decomposed volcanic matter, gives a much higher average yield than is the case in continental

Australia. It has a large production of fruit and vegetables. Lastly, it has great **mining wealth**, which is in the process of development, near Dunedin in the south and in the north of North Island. **Coal** is worked, and the yield in the north is very good; but about the extent of most of its coal-fields little is known. Its chief towns are Wellington, the capital, Auckland, and Dunedin, the two latter being the most important commercial towns. Auckland is its large seaport; the trade of Dunedin passes through Port Chalmers.

## OCEANIA

The numerous groups of islands lying in the Pacific Sea, though of growing importance, enter as yet but little into the commerce of the industrial trading world. Their chief exports, which do not attain much value, consist as a rule rather of their surplus products than of articles specially produced for foreign markets. Among the more important are *sugar*, *fruits*, *copra*.

# TABLE

## Showing the Principal Money in use in important Foreign Countries.

*The value in exchange varies from many causes. The English value given is the par value.*

| Country. | Foreign Money. | English Par Value. |
|---|---|---|
| France . . . | Franc . . . . .<br>100 Centimes = 1 Franc. | 9½d. |
| Germany . . . | Mark . . . . .<br>100 Pfennige = 1 Mark. | 1s. |
| Belgium . . . | Franc . . . . .<br>100 Centimes = 1 Franc. | 9½d. |
| Holland . . . | Florin or Guilder . .<br>100 Cents = 1 Florin. | 1s. 8d. |
| Austria-Hungary . | Gulden . . . . .<br>100 Kreutzers = 1 Gulden = 2 Krone. | 1s. 8d. |
| Switzerland . . | The same as France. | |
| Italy[1]. . . . | Lira . . . . . .<br>100 Centimes = 1 Lira. | 9½d. |
| Spain . . . . | Peseta . . . . .<br>100 Centimos = 1 Peseta. | 9½d. |
| Portugal . . . | Milreis . . . . .<br>1000 Reis = 1 Milreis. | 4s. 5½d. |
| Norway . . . | Kronor . . . . .<br>100 Öre = 1 Kronor. | 1s. 1⅛d. |
| Sweden . . . | Riksdaler . . . . .<br>100 Öre = 1 Riksdaler. | 1s. 1⅛d. |

[1] In Italy the use of paper money has led to a depreciation of the currency. Instead of 25, between 27 and 28 Lire are the usual exchange equivalent for £1.

| Country. | Foreign Money. | English Par Value. |
|---|---|---|
| Denmark | The same as Norway. | |
| Russia[1] | Silver Rouble<br>100 Copecks = 1 Silver Rouble. | 3s. 2d. |
| Turkey | Piastre<br>40 Para = 1 Piastre. | 2⅛d. |
| Canada | Dollar<br>100 Cents = 1 Dollar. | 4s. 2d. |
| United States | Dollar<br>100 Cents = 1 Dollar. | 4s. 2d. |
| British India[2] | Rupee<br>16 Annas = 1 Rupee. | 2s. |
| China | 100 Cash | 7d. |
| Argentine[3] | Dollar (Peso Nacional)<br>100 Centesimi = 1 Dollar. | 4s. |
| Brazil[3] | Milreis<br>1000 Reis = 1 Milreis. | 2s. 3d. |

[1] The paper rouble = 2s.

[2] The fall in the value of silver as compared with that of gold has caused a continual fall in the value of the rupee when exchanged into English money. Its value, instead of being 2s., has sunk to below 1s. 2d. (August 1894).

[3] In both these countries the existence of a large issue of inconvertible paper-money renders the actual exchange equivalent in English money very variable, and much less than the above quoted par value.

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**THE END**

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